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"Honey" in the Movies

By Malitta D. Fischer

THAT'S the name of Nancy Carroll's latest feature "talkie"—Nancy Carroll is a Paramount movie star.

What do "talkie" pictures have to do with bees and honey? Nothing, except when a picture title is the same as the name of the product our bees make it's time to cooperate. With whom shall we cooperate? Why, with theater managements, of course!

This picture "Honey" is not about bees' honey, but rather about a pretty girl, and only once is there a reference to bees and honey. But the title of this picture is carried in advertising everywhere, and splendid advertising too. Billboards carry "Honey," magazines carry "Honey," local newspapers carry "Honey," and all types of special current news notes issued by local theaters carry "Honey" when that picture is run at such places.

Beekeepers should cooperate with local theater managements, and right now is the time to start. Perhaps "Honey" has already been at your theater. If it has, then this thought is too late. But tuck it away and perhaps in the future some picture will come along on which you can try the plan.

"Honey" was featured at one of the Indianapolis theaters a few weeks ago, and upon getting in touch with the advertising manager of that theater, we were told that they would be glad to work with us, and asked what we had in mind. Of course we did not know exactly, but thought we should have a display of honey—extracted, in all sized containers, and comb honey; live bees—and literature to give away.

American Honey Institute asked the help of the Indiana State Beekeepers' Association, and both Mr. Jessup, President of that association, and Mr. Yost, Secretary, agreed to do what they could. Mr. Jessup furnished the honey and observation

hive of bees, the theater management furnished the tables, and the Institute, with the help of Mr. Yost and Mr. Jessup, arranged the exhibit. The Kellogg Company and Century Biscuit Company cooperated in furnishing refreshments.

You will note by the picture that the display was a very simple one and occupied but one small table, the glass hive of bees and literature another, and plates of Honey Krisp wafers a third table.

American Honey Institute trained two young ladies to serve Honey Krisp wafers, talk "honey," and hand out "Honey Helpings."

The total cost of the experiment was about ten dollars and through this undertaking approximately ten thousand persons were reminded that there was such a food as HONEY; about five thousand persons actually sampled honey in combination with Kellogg's Rice Krispies spread on Century Biscuit Butter Wafers, and about fourteen hundred persons asked questions about bees and uses of honey.

The expenditure of ten dollars was almost entirely for wages paid to the girls who handed out the wafers. This does not, of course, take into consideration the time donated by Mr. Jessup and Mr. Yost or the workers from American Honey Institute. The girls who assisted were student girls from a local business school and were paid one dollar a day averaging from four to five hours on a shift. They were also given transportation fare when working in the evening. With just a few hours' coaching, the girls understood that they were to stress that honey makes any good dish better, let the patrons ask questions and give them that type of literature that would best answer their questions. They were also instructed not to answer any question that they did not understand, but rather say point blank that they did not know and

would get in touch with American Honey Institute and have them write the person. Most of the "sticker" questions concerned the food value of honey, and the Institute food value sheets with a short letter would take care of the problem.

Coming back to cooperation, you will readily see that this type of cooperation is very helpful to all who participated. The theater management were adding to the entertainment for their patrons and also adding to their satisfaction in that refreshments were served as the patrons left the show. Beekeepers were securing free publicity and given space to exhibit their product gratis. Such space were it paid for would be expensive. The Kellogg Company, who furnished two cases of Rice Krispies used in making up the honey spread, also received publicity, for when a wafer was given to a patron that patron was told how to make that spread. The Century Biscuit Company, who furnished about five thousand butter wafers and little cracker squares, also were receiving advertising as well as having a new use demonstrated for their product.

The theater management was very liberal in their cooperation, for they not only furnished the space, time of their ushers and janitors, loan of tables, but they also gave publicity to the exhibit as an additional feature specially planned for their patrons. Then, too, they had their sign painter make up some special signs about bees and honey to fit in with the other signs and posters their lobby displayed. American Honey Institute drew up the copy for such signs, and the theater management furnished card, paint, and their artist to do the work. Perhaps you are curious to know what the cards said. Here they are:

Standing on table—Size, 7x11½. Number, 5. Wording, "Make Your



The booth and the attractions are enough. Live bees and lively young ladies. And something to eat.

Dishes the Honey Way." "Flavor of Flowers in Your Food." "Honey from the Bees Is Sweeter Than "Sweetie," ("Sweetie" is the name of a former picture of Nancy Carroll's.) "Flavor of Honey Varies According to Flowers It Comes From." "Honey Is the Fragrance of Flowers."

Extra large sign in lobby—Size, 42½x20½. Number, 1. Wording, "Before You Leave Get a Tasty Honey Krisp Cake."

Sign back of display—Size, 20x32. Wording, "This Exhibit Through Courtesy of American Honey Institute. Indiana State Beekeepers' Association."

Theatergoers Are "Bee Conscious," but Not "Honey Conscious"

After this experiment we are more convinced than ever that the public is bee conscious, but not **honey conscious**. Just the minute they entered the lobby (and we were located so as not to contact with them until they left the theater), "Oh, look at the bees," "Do you suppose there's a queen in there?" "Are they making honey?" and many other exclamations were made, but every one referring to the bees. Not one first remark on the beautiful, glistening liquid sweet.

Why? All these years we have talked bees instead of honey!

As the people came out of the theater, the girls held up the plates of wafers and asked, "Wouldn't you like to try a Honey Krisp wafer?" "Have one, won't you, please?" and whenever one was taken they would quickly add:

"Just Rice Krispies and Honey Spread on a Butter Wafer—that's all," and proceeded further to suggest that all of the literature there

contained many, many more such delicious and delightful honey combinations, all of which were very easy to make.

Next the girls handed out special kinds of honey recipes, according to what the listener seemed to desire. In every case honey was talked—**bees were not mentioned** unless some question from the patron demanded it. It was very plain that once we were given an audience, we could hold their interest on honey. Even men patrons registered interest in the honey way plan of serving food. Of course, children who attended matinee performances with their mothers were delighted with this type of refreshment.

Prizes

Every hundredth person was given a two-ounce jar of honey, every fifth hundredth person a cake of comb honey. This added much to the general atmosphere of the plan, and beekeepers in cooperating with their local theater managements should be sure to include some prizes of honey or honey products.

The Kellogg Company and Biscuit Companies

No doubt every Kellogg sales manager will cooperate with beekeepers to the extent of furnishing the necessary Rice Krispies gratis for making up Honey Krisp Wafers. Biscuit companies are interested in honey too, and in most cases beekeepers will find them willing to donate the crackers needed. The Kellogg Company will also furnish honey literature. Miss Barber, in charge of Kellogg Company Educational Department, has prepared three excellent leaflets on the use of honey, namely: "Do You Like Honey?" "Do You

Use Honey?" "Cooking with Honey." Just write to Mr. Freeman, advertising manager, Kellogg Company, Battle Creek, Michigan, telling him how many you will need, and he will see that you get them. American Honey Institute will furnish you mimeographed "Honey Helpings" at cost.

What to Serve

The Institute has had reports from different sections of the country on what honey bottling companies have done when the picture "Honey" was shown in their locality. Most of them have given sample jars of honey. This is fine, but it is doubtful whether just giving honey to people will teach them the many attractive uses it has. That's why it would seem more practical to serve some sort of combination in which honey is used with other ingredients, for this shows its adaptability to food service. The Honey Krisp Wafers are so easy to make, look very good, and can be made up five hundred at a time and packed between layers of waxed paper in a five-pound cracker box, so that the young ladies will have a stock to draw on in filling the plates from time to time. There are many other excellent honey combinations that could be served, but most of them should be prepared a week or two in advance, and when one does not know two or three weeks in advance about the date of this movie picture, this cannot be done. The following are suggested if you are informed several weeks in advance of the showing of "Honey":

Honey Date Bars. (Make at least two weeks before serving, so they will have full strength flavor, coming only with age.)

Honey Oatmeal Cookies.

Honey Nut Brownies

Honey Candies. (There are any number of honey candies that lend themselves nicely to this sort of a project.)

Honey Popcorn Balls.

Honey Cookies: Honey fruit squares, whole wheat honey cookies, honey jumbles, honey ginger cookies.

Honey Nut Butter Wafers.

Honey Ice Cream.

Much depends on the number of persons you will distribute the honey combinations to, for if the number is large, you will of course have to have something easily made and easily handled.

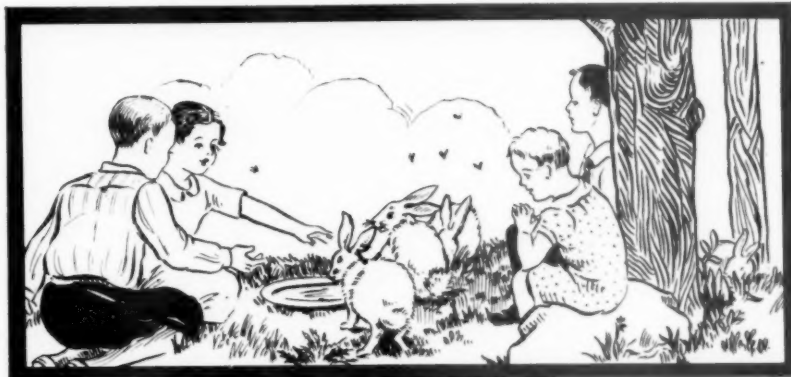
Help "Honey" to Be Sweeter by Serving Honey Way Food

Is there a beekeeper anywhere who does not see the great advertising possibility in cooperating with your local theater management when it

is featuring the "talkie" called "Honey?" You are assured your audience, your exhibit space is free, you are adding to the attractiveness of the feature, and you are helping to make the public more honey conscious, which means increased consumption of honey, which in turn means better livelihood for beekeepers. To make the beekeeping business better—that's what we want, isn't it? Do get in touch at once, won't you, with your theater manage-

ment and find out when "Honey" is coming to town. And when it does, be sure you are all set with your honey display in the theater lobby—plenty of Honey Krisp wafers to sample; girls dressed similar to the way Nancy Carroll is dressed, as Cook, and then proceed to do your bit in our program to make our great public **honey conscious**.

Needless to say American Honey Institute is ready to help you in any way it can.



More Adventures of the Bee Fairies

By Aunt Laura

(Synopsis: Four children with their Aunt Laura are turned into bee fairy children and allowed to visit the bees.)

Chapter 5

AS the bee fairy children, led by Fleet Wing, moved along the combs, they were amused to see the dozens of baby bees, some having gnawed the coverings around and around to open like a little lid and peeping out or extending a tiny tongue, while others were creeping from their cradles as if curious to see just the kind of world they had entered anyway.

"This is indeed our nursery," said Fleet Wing. "See the darlings, what beautiful, happy creatures they are."

"Do bee babies ever cry?" asked Dickey curiously.

Fleet Wing shook her head. "No, my dear, not perhaps because they may not want to, but because bees have no little voice box as you have. Worker bees make no sound except with their wings."

"Unless they happen to be fairy bees," interrupted Yellow Band, with a gay laugh.

"Of course," answered Fleet Wing. "Fairies have special privileges."

Here and there the bee fairy children noticed baby bees slowly creeping out of their cradles and moving carefully about. How soft and downy they were, with wings of exquisite texture! How delicate and velvety soft!

Robert spoke about it.

"Yes," said Fleet Wing. "Bees are covered with a dainty down or fluff, but they soon outgrow it. In a little while it will all wear off and their wings will grow strong and vigorous, and as they go about the hive or out

into the harvest field they lose this babyish softness and grow shiny and less attractive.

"Perhaps you have noticed the police women, Madam Poor Site in particular. How old and shabby they look. That is because in their strenuous work they have worn off all the delicate loveliness of their baby clothes. Robber bees are especially coarse, shiny creatures, probably because other bees in defense of their homes have pulled out the soft hairs and torn their wings, which served the rascals right."

"Oh, oh!" cried Mildred, excitedly. "Look! There's a bee wearing bloomers."

"Oh, ho," laughed Dickey; "orange colored bloomers at that!"

"Why, there's another, and another!" exclaimed Doris May.

Fleet Wing laughed. "Hadden't you noticed those fellows before? They are not wearing bloomers at all. Those are our pollen gatherers."

"Pollen gatherers," cried the children. "What are pollen gatherers?"

"What is pollen, anyway?" inquired Dickey.

"I know that," replied Mildred in her grown-up way. "Our teacher told us that at school. Pollen is the dust that grows on flowers to make them have seeds."

"Fine, fine," commented Fleet Wing. "Pollen is the tiny life-cell of different plants."

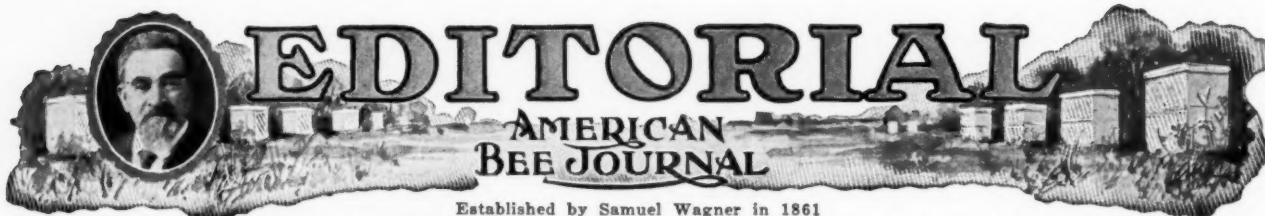
"But what has that to do with bees?" inquired Robert. "What do bees want pollen for?"

(Continued on page 296)

New Outapiary at Ohio State University



This picture was sent us by Prof. W. E. Dunham, of the Ohio State University. It is of the outapiary established in the spring of 1929. It is for experimental work and also for use by beekeeping students.



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A Competitor of Beeswax

There has been so much agitation about the possible competition of corn sugar with honey that beekeepers have entirely overlooked the fact that beeswax is gradually being replaced in the market by other similar products. There are several different waxes which are in competition with beeswax for industrial uses, and every pound of them which is sold replaces that much beeswax.

The most surprising feature of the present situation is the fact that those who should be most concerned about retaining the market for beeswax have been most active in the argument that a substitute wax is equally good and that no one need be concerned about a mixture of the two. To sit idly by and see the product of the hive replaced in the market by another commodity is bad enough, but to actually assist by convincing even the beekeeper that no danger threatens him is hardly to be defended. Syrup made from corn or other sources has taken the place of honey to a very large extent, and now we see beeswax being replaced in a similar manner.

Carnauba (a vegetable wax)

We feel that some facts concerning this wax should be placed before our readers that they may understand how difficult it is for the beekeeper to compete with half-naked natives gathering wax from palm trees in a tropical country.

The carnauba palm, or wax palm, is found throughout a large area in northern Brazil, chiefly in the states of Piahy, Ceara, Parahyba, Rio Grande del Norte and Maranhao, which have a total area equal to ten states the size of Indiana.

Groups of these wax palms cover large expanse of territory, and the most prolonged drouth does not affect the development of the trees or reduce the yield of wax. To gather the wax, the natives cut the sprouts from the tree and expose them to the sun for a day or two, until they are withered and dry. The dry sprouts are then beaten over cloths to loosen the wax in a form of dry powder. The wax is then heated and strained through a cloth. By this simple process thousands of tons of this vegetable wax are produced.

The market recognizes several grades of this carnauba wax and the price varies accordingly. Recent quotations vary from 21 to 30 cents per pound in American cities.

Previous to 1914 the greater part of this wax was sold in Germany, but in recent years the United States has been the leading purchaser. A report from Brazil indicates that not more than one-third of the area producing the wax palm has been exploited, hence much larger quantities of this wax may be expected to appear in American markets when the public has been educated to accept it in preference to other products.

Since the tree grows without cultivation and but a small part of the wax is now gathered, it can readily be seen that it will be an increasingly important factor in the industries for which it is well suited. At present it enters all countries, which buy important amounts, duty free.

An official government report indicates that it is quite generally used as an adulterant of beeswax when the price is low.

The Clover Honey Crop

When the crop is on, we must not let our bees lose any time. So we must be sure to supply them with ample room. Yet it must be supplied judiciously, so as not to cause the bees to occupy too much space, especially if we are trying to produce comb honey, for the sections must be sealed if we want desirable comb honey. So we must use considerable judgment in placing additional sections in the hive. If there is a large crop and the harvest is promising, we may add the empty supers under the already partly filled ones. But if the crop appears to be well along, it may not be desirable to place new supers at the bottom of the pile. In that case it is well to remove a section or two from the partly filled super and place those sections as a bait in the new super before placing it on top of the pile.

When producing extracted honey, if we happen to have a colony which is slow in getting into the supers, it is sometimes quite profitable to give it a few combs already partly filled from the supers of a strong colony, giving the empty combs in exchange to the strong colony. Very likely, at our next visit, we will find the supers of both colonies filled. The strong colony has hastened to fill the empty space given it, and the weaker colony has been encouraged to finish the filling of its super by the unexpected receipt of honey from other sources. In this way we can often find our apiary with every super filled towards the end of the crop. Exchange of combs covered with bees is not likely to cause fighting during a good flow.

A beginner is often astonished with the energy and success of populous colonies of bees in a good honey crop. If the queens have been encouraged to breed at the proper season, the results are often almost miraculous and we find ourselves short of supers to give the bees more room. This is the time when the apiary must be closely watched if we wish to take advantage of all the possible profits of beekeeping.

If we are trying to produce both comb and extracted honey, we must bear in mind that the bees are much more willing to fill empty combs than they are to build new ones. So the comb honey sections must be put in the most available space, as near the brood combs as possible. The extracting supers are put above. Even then we may be astonished to find that they have filled a super of combs before finishing the building, filling and sealing of small sections.

Propolis

In this number the reader will find an article by our good friend and observer, Dr. Brunnich, of Reuchenette, Switzerland. It recounts a theory advanced by some German scientists on the origin of propolis and asserts that most of the propolis used in the hives comes from digested pollen. We are quite willing to see this matter discussed in our magazine. But we are quite sure that most, if not all, of the propolis gathered by the bees is a secretion from trees. The suggestion made that the material used by the bees in coating their combs and the inside of their cells is this digested pollen may have some truth in it. But by far the largest amount of propolis that we have ever seen is gathered during the late summer months by the bees, especially when there is no

nectar in the fields. It is then that they carry it to the hive on their legs.

Having been asked by a French scientist to supply him with as much as we could secure of the propolis which is produced here, we sent him a large lump of it taken from the walls and crevices of our hives. This material is greenish brown and very "sticky," becomes soft at a less temperature than beeswax and is much harder than beeswax at low temperatures. That is what we consider as real propolis. It was very aptly described by Mr. Frank Rauchfuss on page 358 of the July, 1927, number of the American Bee Journal. However, perhaps the yellow material which the bees use so lavishly at certain seasons to coat the combs may be the product of pollen, as stated. This question remains for further demonstration, and the article of Dr. Brunnich is interesting on this score.

Swarming Time

June is the swarming month of the year in nearly all the middle states. But if you have young queens, very few drones, plenty of room for breeding and for storing honey, you will have a minimum number of swarms.

Sometimes a swarm alights on the trunk of a tree, on a post, or in some equally inconvenient spot. The best thing to do in such an emergency is to attract the bees away from this spot, with an old comb, or, better still, with a comb of brood taken out of a hive. It is much better and easier than trying to brush them into a receptacle for the purpose of hiving them.

Sugar in Florida

In every line we find active pressure to develop new markets to permit continued expansion. In the face of the present over-supply of sugar in the world's markets, new plantations are established. In the Everglades of Florida we learn that a new sugar plantation contains 170,000 acres, of which 25,000 is already planted to sugar cane. A new sugar mill is in operation, fleets of tractors pulling heavy machinery are operating to prepare more acres for planting, and the development of immense acreage thus continues. Millions of dollars of capital, backed by the best equipment and skill, are thus used to develop a new sugar industry in a new region. More and more sugar thus becomes available and the competition for the market for sweets becomes increasingly severe. If honey production is to continue to be profitable, we must either find new uses and new outlets for honey or we must find ways and means of production which will enable us to compete in a low-priced market.

Expansion of Honey Production

In a recent radio address from Ames, Iowa, Prof. F. B. Paddock, State Apiarist, estimated that there are eighteen thousand beekeepers, including all who own one or more colonies, in the State of Iowa. He stated that the 1929 crop for Iowa was larger than that of any other state, and that whereas ten years ago the number of commercial honey producers in the state could be counted on the fingers of one hand, there are now two hundred people who obtain all or a major portion of their income from the production of honey. This is a surprising expansion, and this number of producers in a state like Iowa indicates that a marketing agency to dispose of the crops will very soon be necessary.

Similar development is taking place in Nebraska, the Dakotas and surrounding territory. Marketing must keep pace with production if the industry is to thrive.

We hope that our readers are listening in to Professor Paddock's bee talks each Friday afternoon at one o'clock, over Station WOI.

Competition Between Food Products

Since the capacity of the human stomach is limited, any advertising campaign which increases the demand for one food product must bring about a similar reduction in the use of another. Health campaigns by dietary experts have greatly increased the demand for eggs at the expense of meat. While the output of poultry has been increasing, the number of meat-producing animals has declined.

Advertising is selling, and the producers who are most aggressive in bringing the merits of their product to public attention find the most active markets. There has been a marked increase in the production of honey during recent years without a corresponding effort to increase the market demand. The result is low prices and poor demand. Just now it is important that every public institution relating to agriculture stress the marketing, rather than the increased production. There is an over-supply of sugar in the world's markets, and sugar takes the place of honey in too many homes to insure prosperity for the honey producer.

Just now we feel that the American Honey Institute is doing more than any other agency to create new outlets for honey. More funds are needed to take advantage of the many opportunities to secure cooperative advertising.

International Garden

The proposed International Peace Garden to be established on the boundary line between the United States and Canada is a unique plan. It was first suggested by Henry J. Moore, horticulturist of Ontario, and has been very generally approved. The project is definitely under way, sponsored by the National Association of Gardeners, and is in charge of a committee of famous people. Such celebrities as Mrs. Henry Ford, Alfred Smith and Frank Lowden are behind the movement. It is proposed that the garden be established on the boundary with one-half in each of the two countries, that it contain at least a thousand acres, and that every important tree, vine, shrub and flower adapted to the region be grown there.

The garden is designed as a tangible expression of the friendly relation existing between the two countries for more than a hundred years. How much better that a garden should mark the boundary line rather than a fort with guns and soldiers facing our neighbors.

Bees are so closely related to gardens that our folks are likely to feel more than a passing interest in this new venture. Gardens are unthinkable without bees, and of course bees are even less possible without gardens.

An Honorary International Election

We are informed by Dr. A. Z. Abushady, publisher of "The Bee Kingdom" in Cairo, Egypt, that C. P. Dadant has been selected as president, for 1930, of the "Bee Kingdom League." We are certainly much flattered by this selection, but we would suggest that some European beekeeper could better fulfill the position, for it would be impossible for Dadant to be present at any meeting of this body. A union of all beekeeping interests is a progress much to be desired. It is too bad that the distances are so great from the U. S. to the eastern countries. The Bee Kingdom League has our hearty good wishes for its success.

Ninety Years Old

Mr. J. E. Crane, Middlebury, Vermont, one of our largest and most successful honey producers, is ninety years old, May 16.

Our readers will join us in wishing him a number of years of useful and enjoyable life.

We have seen L. L. Langstroth and Charles Dadant live to eighty-five. But it is rare to see a leading beekeeper reach the age of ninety. Mr. Crane can still write interesting articles which have the character of experience and successful practice.

Propolis, Its Origin and Use in the Hive

By Dr. Brunnich

THIS is the title of a paper by Dr. P. W. Philipp, of Dobeln, Saxony, in the "Biologisches Zentralblatt," volume 48, number 12. In my opinion, his discovery is one of the most important ones of the last two years concerning the physiology of the bee. I will try to give a digest of it in as short a space as possible.

The author does not doubt but that a good deal of propolis is taken by the bees from trees especially horse chestnut, poplars, elms, conifers, etc. He knows that bees take this propolis on their legs into the hive and often gnaw off the propolis from frames, and so on. He suggests, however, that there is another kind of propolis which the bees produce themselves, easily distinguished by the microscope from the propolis from trees.

In 1923, on frames, wire-gauze, etc., he saw little drops of a clear-golden-greenish color, perfectly transparent, which proved to be a gum different from the propolis of trees. Under the microscope this gum, which he calls balm, shows without exception pollen-shells and little hairs which never can be found in propolis gathered outdoors. The same balm covered all the metals, wires, nails and frames in the hive.

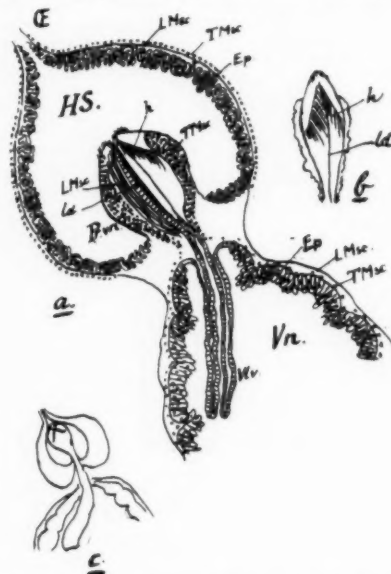
His most important discovery is that every newly built cell is washed with this balm before the queen lays her eggs in it. Even after the bees have emerged, the inner surfaces of the cells are clothed with the balm. This substance gives combs their stiffness and solidity. In time the gum becomes darker and darker, and Philipp suggests that it is the cause of the black color of old combs.

An apiarist, Hube, in Perleberg, as well as Philipp, has observed how bees spit out little drops of propolis. Now the question arises as to where the balm is produced and from what it is made. It is a well-known fact that the pollen grains of many flowers have a minute covering of gum. Jaubert-Paris claimed that the color of the combs comes from a substance, Dioxyflavon, which can be found in the resin of poplars. He thought that the bees gather this resin, which they undoubtedly do, and with it they wash the combs, giving them a yellow color. But Philipp proves that, in his colonies, there is the same Dioxyflavon, yet poplars do not exist in his country. Further on he suggests that the resin of the pollen gives rise to the Dioxyflavon and that the balm comes from the pollen.

Now as to the question where and how the balm is produced by the bees, Philipp gives the following hypothe-

sis: The proventriculus with the honey-mouth is an organ supplied with vigorous muscles. (See the figure herewith.) Most authors agree that the proventriculus serves to shut off the stomach (ventriculus) from the honey sac. But Philipp observes that there is a sphincter (muscle) on the base of the stomach mouth which closes the stomach from the honey sac. He thinks that the four chitinous ledges, with the aid of the enormous muscles, grind the pollen-shells.

By capillarity a little digestive sap enters from the stomach through the proventricular valve and partially digests the pollen. With this digestion, the indigestible gum of the pollen-



A. Section of stomach mouth and honey-sac.
B. An isolated lip of the stomach mouth.
C. Position of stomach mouth when the balm is spit out.
Oe, oesophagus; HS, honey-sac; Pr. vn., proventriculus; L. msc., longitudinal muscle; T. msc., transverse muscles; Ep, epithelium; H, hairs; Ld, chitinous ledge.

shells becomes free and is then pressed across the hairs at the end of the stomach-mouth which form a sort of filter. It comes into the oesophagus and is then spit out.

When I first studied the stomach-mouth, I had the idea that this organ, with its wonderful muscles, must have an important function of its own as with other insects that have real teeth on the four ledges, but I could not detect any teeth there. Now the theory of Philipp gives a most probable explanation of the function of the stomach-mouth, those ledges working like millstones.

To resume, we have two kinds of propolis: First, the genuine propolis or balm produced by the bees from the pollen grains in the stomach-mouth. This furnishes the largest portion of all the propolis in the hive.

It gives to the combs their solidity; it covers foreign bodies and it darkens by oxydation. It is easily recognizable microscopically by hairs and pollen-shells which it contains.

Secondly, outdoor propolis coming from trees. It serves especially for closing holes in the hive, is of a different color, does not become dark, and contains neither pollen-shells nor hairs nor other particles of the bee body. It can only be gathered at a certain temperature, while the real propolis, the balm, is always secreted as long as the bees eat pollen. The balm has probably an important task in the disinfection of the hive by varnishing the interior of the cells and by the resulting fixation and removal of harmful microbes.

To me, Philipp's theory seems most probable, but I do not doubt that it will be difficult for it to get general acknowledgment, like all new ideas.

Color, the Last Requirement in Looking for a Breeder

The article in the November issue of the American Bee Journal by Jes Dalton, "Caution in Going Over to Yellow Bees," contained some very good advice. In my own apiary, color is the last of the requirements in looking for a breeder.

Producing more comb honey each year causes one to look up other traits rather than color, gentleness, and good honey gatherers. Of course, we must have the latter, and all wish for the gentle bees; amateurs all want the purty bees, too. But in comb honey we want finishers as well. Bees may be gentle, very yellow, and store very well, but if they do not finish their comb up with that beautiful polished look they are worthless for comb honey production. Every year calls for a careful selection of my breeder. I do all my queen-rearing by the grafting method, selecting three or four colonies showing as many desirable traits as can be found for good comb honey bees. From these I do all the grafting. At present my bees are not of the yellow type, but are real honey getters, and the comb finishers are improving every year.

Only once in a while do I see an article in the bee journals regarding comb-honey bees, but from my own experience comb-honey bees are very different from the average run of bees for extracted honey. From time to time new queens are bought for the purpose of testing to find more good traits adapted for comb honey. Once in a while one finds a queen that is good, but most times they could be classed as only worthless, except for pretty color and storing good. Such traits to the average queen breeder are enough to classify her as a good queen. Of late I have

been doing some experiments with rearing queens, using both Carniolans and the Italians of my own strain for these experiments. I have also used cells from a neighbor beekeeper who has bred the strain for twenty-five years for comb honey. With continued trying, breeding only the very best adapted for comb honey, who knows but that some day we can have a perfect comb honey strain of bees? And it certainly will take some careful study to get them up with Jay Smith's Kansas bees.

Carl E. Killion, Indiana.

S. O. Hillerud Appointed Provincial Apiarist for Alberta

We note with interest the appointment of S. O. Hillerud as provincial apiarist of the Province of Alberta. That puts the work of beekeeping in this province in capable hands.

The success of beekeeping in the other provinces leads us to expect that Mr. Hillerud will have a high standard for his work. I am sure he is certain of cooperation.

We are wondering what Alberta will do at the Royal Agricultural Fair at Toronto this year. Samples of honey from the western provinces have competed successfully in this Canadian-wide show, and it would be rather zestful to learn of Alberta capturing stakes.

Mr. Hillerud is a graduate of Alberta University. In 1921, suffering a nervous breakdown while teaching, he attended the Ontario Agricultural College and became interested in beekeeping under Mr. Millen and Mr. Jarvis. Following that he worked with J. L. Byers at Markham and went into beekeeping on his own hook.

He has traveled among the beekeepers in the states, particularly in Montana and California, and his practical experience is extensive enough to make him a good man for his present position, to which he was appointed last December.

Passing of Homer B. Turrell

Homer B. Turrell, of Medora, Indiana, a long time correspondent of the American Bee Journal, died at Tacoma Park, Maryland, April 9, 1930. He was born in Jackson County, Indiana, in 1868.

Mr. Turrell was a student of nature and well versed in languages, reading French, German and Italian fluently, and a student of Greek classics. He was a wonderful violin maker also. He made a particular investigation of varnishes in an effort to solve the secret of the old Stradivarius. Among his prize possessions was an authenticated autograph of Benito Mussolini, Premier of Italy,

AMERICAN HONEY INSTITUTE

BEE INDUSTRIES ASSOCIATION OF AMERICA
CHAMBER OF COMMERCE BUILDING
INDIANAPOLIS

DR. H. E. BARNARD, PRESIDENT

Nebraska Boosts Institute

At the annual meeting of the Nebraska Honey Producers' Association, subscription was raised for the Honey Institute. Associations are rapidly falling in line in this important work.

New Wisconsin Bread Made with Honey

The Institute has a report from James I. Gwin, of the marketing department at Wisconsin, stating that the Liberty Baking Company of Milwaukee have put out a honey bread that has all the appearance of a "knockout." They put out 3,000 loaves of bread in the first effort, using 240 pounds of honey, and orders came in very rapidly.

"Feeding the Child for Health"

This is the title of a booklet issued by the California Fruit Growers' Exchange, a cooperative, non-profit organization of 12,000 growers. On six pages it gives suggested uses for honey in connection with fruit and feeding. This is the direct work of the Institute in cooperation with the Exchange. Copies of "Feeding the Child for Health" will be furnished to mothers or health workers if they

whose renown as a violinist is overshadowed by the fame of his public life.

He was also an enthusiastic beekeeper and contributed many spicy items to the columns of the bee papers in this country.

Pollination Booklet

A new bulletin, entitled "Fruit Pollination," by A. E. Murneek, has recently been issued by the College of Agriculture at Columbia, Missouri. It contains twelve pages of matter relating to the subject of pollination of apples, pears, cherries, peaches, grapes, berries, etc. The importance of bees in the orchard at blooming time is emphasized. Those interested should ask for Bulletin 283 and address the College of Agriculture, Columbia, Missouri.

Nevada Regulations

The State of Nevada has recently established a quarantine against bees in packages except under special conditions. Bees on combs have previously been prohibited from enter-

will write to California Fruit Growers' Exchange, Box 530, Station C, Los Angeles, California.

DenDooven Finds Honey Helpful

K. Camille DenDooven, director of the food laboratories for the H. A. Johnson Company, Boston, Massachusetts, and author of professional books for the catering industry, has worked out nine recipes which he intends to use, all of them calling for honey. Here are their titles:

Ann Box Cookies; Honey Cookies; Honey Filling; Scotch Cookies; Buster Brown Cookies; Bran Honey Cookies; Honey Jumbles; DenDooven's Fruit Cake and Honey Cake Swiss. Space will not permit giving the recipes. Write directly to the H. A. Johnson Company, Boston, Massachusetts.

Betty Crocker Has Radio Program on Honey in Baking

Betty Crocker, the home institute worker of the Gold Medal Flour Company, has planned to devote a whole radio talk on suggestions of honey in baking for some time this fall. This is the first of its kind and we hope to have more information later.

ing the state. The new regulation requires a certificate from the regular official having inspection in charge to the effect that the bees have been inspected **within thirty days** and found free from American foulbrood. It further provides that in case less than three per cent of the colonies of the apiary at point of origin were diseased, the bees may be permitted to come in, in cages, provided the official certifies that all diseased colonies have been burned under his personal supervision.

Honey in Bread

The use of honey in the making of bread is constantly increasing. A small quantity of honey serves to retain the moisture so that the bread does not dry out so quickly, and in addition adds to the flavor. Honey bread is popular in several cities. Our attention has recently been called to the "Honey Bread" which is advertised and sold on a large scale by the Liberty Baking Company of Milwaukee. This firm is reported to use 3000 pounds of honey per month in its baking.



The attractive honeyhouse of the Bogdanoff apiary

THE American Bee Journal has several times discussed bee rearing in the North, and in the March issue, 1929, page 117, "How Far North?," the fifty-ninth parallel is given as the farthest (Scotland).

Beekeeping is to be found farther in the North than that. The whole country of Finland lies to the north of the sixtieth parallel, and, although beekeeping is not very well developed there—there are only about twelve

to thirteen thousand colonies, and most of the apiaries are in the South, along the Gulf of Finland and a part of the Gulf of Bothnia—nevertheless a few beekeepers are to be found farther in the North. In the Government of Vaasa, between the sixty-second and the sixty-fourth parallels, in 1921 and 1922, there were about seven hundred colonies.

Beekeeping so far north is possible because of the many honey plants

which bloom there in our short summer. Growing of special plants cannot be undertaken except at great expense and work, as the soil is either stony, sandy, or turfy and hard to cultivate. There are large areas, however, of uncultivated land covered with willow herb (*Epilobium angustifolium*), heath (*Caluna vulgaris*), and other plants which give a fairly long honey harvest. In our locality, in from forty to fifty days



Apiary of the author in Tyriseva, Finland

Beekeeping in the Remote North

By A. T. Bogdanoff

Readers often criticize the Journal for printing so much about beekeeping in other lands. It must be remembered that one of the outstanding facts about this paper is that it is read from sun to sun. Such a widespread group of readers indicates an international interest. So we believe that news and stories of bees and beekeepers the world over should always be given. This tells of beekeeping in Finland.

time, a good strong colony may collect between forty-five and sixty pounds of honey.

There are many obstacles also. One of these is the difficulty of buying bees and the ignorance of the seller as to handling and shipping them. In America the shipping of bees long distances is a natural and easy thing. Here it is in most cases a source of worry for both the purchaser and the seller.

In 1928 I bought several colonies of bees, which arrived in good, strong boxes made of $\frac{3}{4}$ -inch thick lumber, weighing in all from 15 to 25 pounds, but when they were unpacked, instead of the promised three- and four-pound swarms in each box, there were only enough bees to make from one and one-half to two pounds each. I found out later by correspondence that the bee master, who had been selling swarms like this for twenty years (to judge by his own statement), had placed natural swarms into boxes with comb foundation. The boxes also had open entrances and the bees were flying about during a whole week. Meanwhile the weather had been exceptionally bad and the bees, not finding sufficient food in their new homes, had scattered. This is a fair sample of the ignorance of the peasant beekeeper. In spite of these disadvantages, we have to order from them.

Buying bees in the neighboring countries (Russia, Esthonia, Sweden, Italy, Austria, Czechoslovakia) is quite impossible because of the expense, and usually the bees arrive half dead. So there is nothing left to do but hope that someone will invent a means of dispatching by radio.

Another obstacle is a long, cold winter. In February, 1929, the temperature went to 38 F. below, during which 20 to 30 per cent of the bee colonies perished. Sometimes 50 to 70 per cent are lost. As the apiaries are generally small, the beekeepers have no special cellars for wintering, and that accounts for the losses.

We have no figures on bee diseases. Nosema Apis undoubtedly does a great deal of harm. It is most common because of ignorance; it passes by most beekeepers and it is seasonal in its character.

All these difficulties prevent beekeepers from having a reasonable income out of their business, and so beekeeping here can only be regarded as a second-rate occupation and never as the sole means of existence. That is why the apiaries are small in most cases, from an American point of view—usually from five to ten colonies. The owner of from thirty to fifty colonies may well call himself a big beekeeper.

So beekeepers can hardly be expected to use modern equipment, and consequently they work in a primitive

way. Thirty-two per cent of them have bees in straw skeps in the form of a bell with walls about one and one-half to two inches thick and a capacity of about seven Langstroth frames. They gather little honey from these, but many swarms. Such skeps are often placed in wooden cases, and from the outside look like frame hives.

The most popular frame hive is the German Gerstung model with a frame $10\frac{1}{4}$ inches wide and $16\frac{1}{2}$ inches high. Seventy-five per cent of all of the frame hives are this kind. The frames run parallel to the front of the hive. Hives of American type with wide frames perpendicular to the front are very rare. As there are no workshops making hives, most of them are home made and the dimensions of the frames and other parts are arbitrary. Very often you see hives of the same type, but with different frames, and even frames of different sizes in the same hive.

Most of the fixtures are imported from Germany or made after German models. Every beekeeper who has studied German catalogs knows what a multitude of things are included in them which are useless, yet unexperienced beekeepers are confused by

them and driven to needless expenses.

Books on beekeeping published in the Finnish language are scarce and of small size—hardly the size of one issue of the American Bee Journal. They explain only the principal notions without going into particulars, and are very often out of date. Most of them are worked over from German sources, and only lately have they been mentioned in the beekeeping papers.

A few remarks concerning American methods. In the southeast of Finland, where beekeepers have emigrated from Russia, are found Dadant-Blatt hives, which are so popular in the latter country, but such apiaries are not many. In my own apiary, thirty miles from Petrograd, all the hives are Dadant-Blatt, constructed after the model of the Russian beekeeping society. That proves that the Dadant hive reaches farther and farther and has now traveled nearly to the limit of beekeeping in the North.

Let us hope that very soon we shall learn to use American methods of beekeeping as well, for we need and must learn many things, and above all we must learn that time is money.

Finland.

Doings in the Northwest

By N. N. Dodge

Crimson Rambler Plant Damaged by Fire

A fire of undetermined origin badly damaged the packing plant of the Crimson Rambler Products Corporation of Portland, Oregon, on May 3. This organization, which at the time was making extensive enlargements of its honey packing facilities, had approximately one carload of honey in stock at the time of the fire. Considerable damage was done to the honey and the packing equipment, which were located on the top floor of a four-story building.

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"Honey" Baseball Team in League Games

Advertising honey through the field of sports is being tried out in Seattle. A baseball team wearing the colors of the Pacific Slope Honey Company has entered the city commercial league and will contend for the all-city trophy. Contests on the commercial league schedule are well attended, and the final games attract considerable attention. Leading teams are given publicity in the sport columns of the daily newspapers.

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Faulconer's Lawsuit Settled Out of Court in Washington

A lawsuit in which many Pacific Northwest beekeepers figured as wit-

nesses was concluded on May 1 at Everett, Washington. The court action was inaugurated by Mr. Bert Faulconer, bee inspector of Snohomish County, Washington, whose apiary was seriously damaged by fire on August 7, 1929. Mr. Faulconer brought suit against the Great Northern Railroad charging neglect in failure to remove inflammable materials from the right-of-way, and against the Northern Pacific Railroad for operating an engine with a defective spark arrestor. After four days of questioning and cross-questioning of witnesses, the case was completed, but was settled out of court without going to the jury. Among the beekeepers called as witnesses and to submit expert testimony were Mrs. A. G. Webster, Clayton Turnipseed, Clyde O'Brien, Julian Joubert, Patrick, Wier, Jansen, W. L. Cox, Fred Mandery, Mommsen, and Miss Pearce of the Pearce-Dickerson Bee Farms. Because of the fact that a discussion of bee disease was carried on in the trial, many beekeepers were alarmed because of the possibilities of undesirable newspaper publicity. The trial, however, did not receive a great amount of attention from the press, and upon several occasions each at-

(Continued on page 301)

Marcus Nalley, of Nalley's Incorporated, laid the foundation for an immense food products business in a hotel kitchen.



From Soup to Nuts and Honey

By Natt Noyes Dodge

If there were enough food concerns taking honey seriously, like Nalley's, there would be less type used to deplore the position of honey in the market. Honey, as a primary natural food, has its own place which must be developed steadfastly.

ON February 9, 1918, an unknown chef was making soup in a hotel kitchen in Tacoma, Washington. On the same date just twelve years later as proprietor of a food products factory distributing its pack in five states, Alaska, and British Columbia, and doing an annual business of \$1,250,000, this same man opened for the inspection of the public a new and ultra-modern, completely equipped building which includes the finest, most up-to-the-minute honey-packing plant in the Northwest. Marcus Nalley is the man, and "If It's Nalley's It's Good" is the slogan which has helped to make Nalley's honey and nut-honey-spread famous all up and down the Pacific Coast.

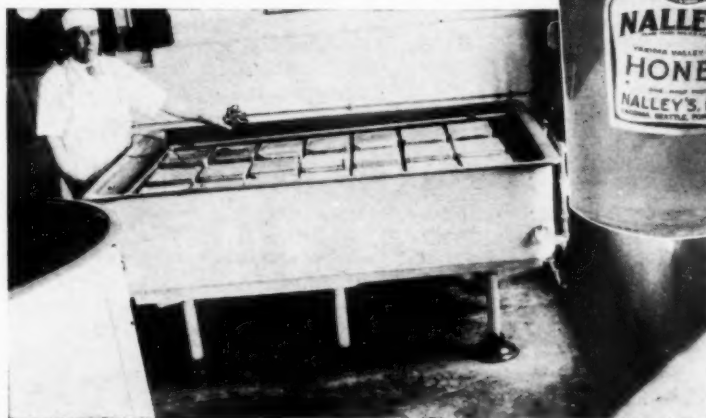
The story of the phenomenal growth of Nalley's, Incorporated, from the family kitchen in which he cooked his first potato chips, to be sold from door to door from a basket carried by this ambitious young man, to the two-story, attractively landscaped brick building 90 by 140 feet in size, employing more than one hundred men and women and requiring sixty trucks for distributing the product, is a tale of pluck and ambition based on sound business principles and a first-hand knowledge of the preparation of quality foods. Nalley's Incorporated packs twenty-five different food products, including mayonnaise, pickles, sandwich spread, honey, and nut-honey spread. It is the latter two in which Northwest beekeepers are interested, for Nalley buys, packs, and distributes 280,000 pounds of western honey every twelve months.

In a spotless alcove of the light and roomy second floor of the new building is the honey liquefying tank of the Nalley plant. Here, under the careful scrutiny of Mr. J. E. Reynolds, the five-gallon cans of granulated honey, with caps removed, are placed upside down on the grid-like false bottom of the glass-lined tank. A coil of steam pipe rings the interior walls of the tank, and a heat-tight lid clamps over the top. The most interesting feature of this equipment is the automatic temperature control unit which governs the liquefying process. Two thermometers connected by electric wires to gauges on the wall of the room are placed in the tank among the cans. By setting the gauges, one at the

maximum desired temperature and one at the minimum, valves controlled by the thermometers automatically turn the steam off and on when the extreme temperatures are reached. In this way, without human attention, the liquefying process is carried on without danger of the honey becoming overheated or the process being slowed up by cooling.

From the liquefying chamber the honey flows by gravity to a 210-gallon tank which is built into the floor

Mr. J. E. Reynolds has charge of the honey packing and the steam heated, automatically controlled liquefying tank. His Nalley jar is neat and attractive.

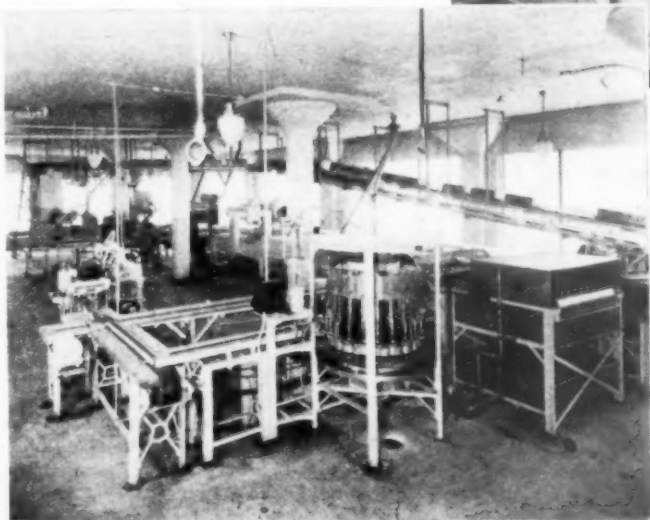
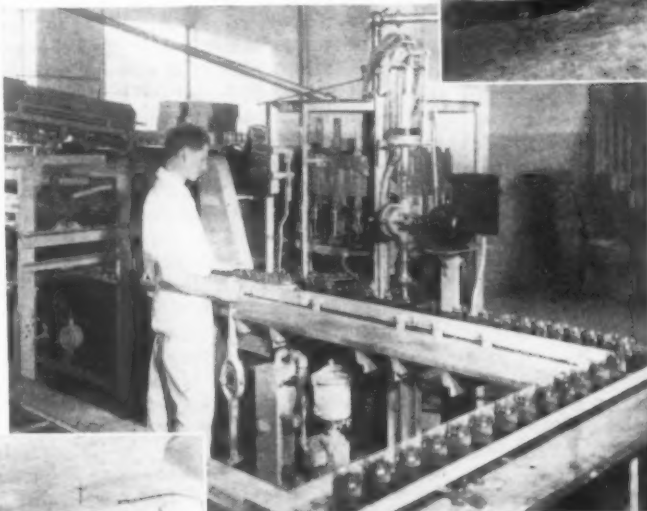


The packing plant is light and airy inside, attractive and substantial without. Sixty trucks, like the one shown, distribute Nalley products to thousands of grocery stores in the Northwest.



of the room, the lower portion extending through the ceiling of the packing room directly beneath. From this tank, the temperature of which is regulated in the same manner as that of the liquefying tank, the honey passes through a filtering device on its way to the automatic bottle filler, which will fill twenty-one jars at one operation. The machine is of the vacuum type, a tight rubber disc sealing the top of each previously sterilized jar, while the air is withdrawn by a powerful suction pump attached by a tube to the filler. The vacuum thus produced in each bottle causes the honey to flow in through the hollow shaft upon which the sealing disc is mounted. This process not only does not permit air to be drawn into the honey as is the case with the use of the customary honey gate, but actually facilitates the rising of

any air bubbles which may be present, through the lowering of normal atmospheric pressure. This process of packing has much to do with the
(Just turn the page, please)



Top—Honey liquefying vat and storage tank. Only the top is seen, the main part being below in the packing room. Indicators on the wall are wired to thermometers in the tanks for automatic temperature control.

Center—Packing honey. Empty jars enter at the left of the filling machine and leave at the right on a conveyor which carries them to girls who do the capping and labelling. Sixty jars are filled per minute.

Below—Another view of the automatic, vacuum type machine for filling jars and a better view of the conveyors.

clearness and sparkle which makes Nalley's honey so attractive to the housewife. From the filler the jars pass to the moving conveyor which takes them to the girls who cap and label them. Although the Nalley plant is equipped with automatic capping and labeling machines, the honey is packed in another portion of the plant than that in which they are located for use with the mayonnaise. After being capped and labeled, the jars are packed in cases and taken by conveyor belts to the large, airy stockroom, or shipped to the Nalley warehouse in another city. The pails, in which a relatively small portion of Nalley's honey is packed, are filled in a nearby portion of the plant.

The Nalley system of distribution is unique and interesting. Aside from the factory warehouse, there are other warehouses located in the larger towns and cities of Washington, Oregon, California, Idaho, Montana, British Columbia, and Alaska, each of which keeps on hand a complete stock of Nalley products. From each of these warehouses one or more Nalley trucks operating on scheduled routes serve the various grocery stores in the locality. Grocers are in this way provided with Nalley products direct from the truck in quantities as large or small as desired. The driver of the truck acts as salesman, deliveryman, collector, and display man, as it is a Nalley policy to keep the goods constantly before the public, and the salesmen are encouraged to "put in" window and counter displays and to arrange the products tastefully on the grocers' shelves. This constant, careful attention assures the grocer a stock of Nalley products always fresh and so arranged as to offer the greatest inducement to the "sight appeal" instinct of his customers. All of the Nalley products are packed in a specially made, dainty shaped glass jar in full half-pint, pint, and quart sizes. In this type of jar honey appears to its best advantage, and for this reason honey enters into the great majority of the displays of Nalley products. At the Nalley booth in the food products section of the Northwest Merchants' and Maritime Exposition, held each August in Seattle, honey holds the center of the scene, the jars with their green and gold labels being arranged en masse with a series of bright lights behind them. In addition to displays and demonstrations, Nalley's products are advertised by means of street car cards, billboards, and newspaper space. In connection with Nalley's honey, there has been issued and widely distributed a folder exploiting honey, explaining its health and food values, and giving numerous recipes for its use.

Nalley salesmen are well posted on

the manufacture and packing details of the various food products, for many of them have previously held positions in the packing plant before being promoted to one of the trucks. A meeting of the salesmen is held in Tacoma every other Friday evening, and all of the men in the district are required to attend. Many of these meetings are given over to outside speakers representing industries associated with the food products packed by the Nalley plant. On March 21 the manager and plant foreman of the Pacific Slope Honey Company of Seattle were invited to Tacoma to speak to the Nalley salesmen on the production and marketing of honey. The Nalley salesman were familiarized with the viewpoint of the honey producer and given much information of value to them in answering the questions of grocers regarding Nalley's honey.

Although honey and nut-honey-spread, a mixture of peanut butter and honey, are but two of the Nalley products, the very fact that there are so many various food items carried by each of the Nalley trucks enables this enterprising concern to distribute honey to many of the smaller grocery stores which would not otherwise keep honey in stock. Because the grocer may purchase as few as three jars of honey at a time from the Nalley salesman and have them delivered immediately, and because he knows that, in the event they are not sold, but stand on the shelf long enough to permit their contents to granulate, the Nalley man on his regular weekly or bi-weekly visit will replace them with fresh, the grocer is glad to make room for honey on his shelves and is encouraged to push its sale. Nalley advertising, Nalley displays, and Nalley quality all help the grocer to obtain quick turnover as well as inspiring purchaser confidence in the green and gold label. Because of the high quality of the honey packed, and also because of the system of distribution which does not overload the grocer, Nalley's Incorporated has kept open a honey outlet which is of immense value to Northwest beekeepers during the period of marketing difficulty.

Handling Swarms to Prevent Increase

By Austin Fields

SWARMING time will soon be here, and again that question of what to do with the swarm when increase is not desired will confront many beekeepers. If you feel that it would be of interest to your readers, you may pass on to them, through the columns of your paper, a method which I have found very successful when increase is not desired, and which is as follows:

(1) After the swarm settles, hive it into a hive body containing eight frames supplied with narrow strips of starter foundation comb, the kind of comb used in the supers when chunk honey is desired. (Use only six frames if they are hived in an eight-frame hive body.)

(2) As soon as they are hived, go to the parent hive from which they swarmed and remove all the queen-cells, and at the same time take out two frames of brood comb, selecting the two frames that have the least brood in them, and put them in the new hive where the new swarm has just been hived. This makes the new hive consist of two frames of brood comb and eight frames of starter foundation comb. Let the new hive remain in the location where the swarm was hived into it, for three or four days. The queen will immediately begin laying on the two frames of brood comb, and the bees will immediately begin building on the strips of starter foundation comb.

(3) At the end of three or four days go into the parent hive from which the swarm issued and remove all the queen-cells that were started after the first cells were removed. The second lot of cells will have been started from eggs deposited by the queen immediately before she led the swarm out. When the second lot of cells are removed the parent hive is then hopelessly queenless, as they have no eggs then young enough to produce a queen. Then, near the close of the day on which this second operation takes place, and after the second lot of queen-cells are removed, carry the hive containing the new swarm back to the parent hive, lift the parent hive off the bottom board and set the new hive on the bottom board, place a queen excluder over the new hive and set the parent hive on top. You now have the swarm reunited with the parent hive, with the former occupying the position of the brood chamber and the latter occupying the position of the super. This operation should be conducted near the close of the day, after the field bees have returned to the new hive.

(4) On the second day following, after the bees of the swarm have become thoroughly adjusted to their new location, lift the super off and remove from it the remaining eight brood combs. Take off the queen excluder and lift out of the bottom chamber the eight frames of starter foundation comb, on which the bees are now hard at work, with all adhering bees on each frame, being careful, of course, to see that the queen is not on one of these frames. She will usually, at this stage, still be on the two frames of brood comb. Place these eight frames with adher-

ing bees in the super from which the brood combs have just been removed. Place the brood combs in the bottom chamber into which the new swarm was hived. Place the queen excluder back over the bottom chamber and set the super on top. You have now accomplished a two-fold purpose: you have brought the queen back to the brood combs which she abandoned when she swarmed, and you have all the bees nicely at work in the super, and neither the queen nor the bees seem to realize how it all happened. The bees go ahead working like trojans in their super, and the queen does the same thing down in the brood chamber; and while I have tried this method in only a limited number of cases, I have never had one case in which they swarmed a second time. Add super room as it is needed, just as you do to the hives that have not swarmed, and you will receive practically as much honey from this hive as any of the others.

Kentucky.

(The only fault we can find with this method is the large amount of labor it will cause. But it must be successful if properly carried on.—Editor.)

A Plea for Association Work

By C. A. Mackelden, President Illinois State Beekeepers' Association

THE spring months are the time for local bee associations to hold their meetings. It is to be hoped that this year will show a decided increase in attendance.

There is a growing tendency among legislative bodies to make beekeeping and honey a target of attack through new, injurious legislation that nothing but concerted effort on our part can overcome. The legislative committees of beekeeping associations, by keeping track of these things, can compel a respectful hearing where individual beekeepers would be ignored.

Every legislator is constantly on the alert, trying to discover how he can prove to his constituents that he is working in their interests and, at the same time, seeking to avoid the alienation of votes from his party's ticket when he comes to the polls for election. He pleases his supporters when he can find a chance to pass a bill that they have approved. He displeases them when he tries to push a bill to which there is organized opposition.

Knowing this, he is always averse to doing anything that is disapproved by associations or societies. He knows that it means a loss of votes, not only to himself, but to his party, if he offends the members of associations. When called upon to vote, he will usually vote for a bill that is favorable to members of an association. Strong organizations are therefore

the best when we are called on to battle for our rights.

Aside from all considerations of the tempting power of so-called "boodle," in building up our state association, in the presence of the menace of recent attempts at injurious legislation, it is not only our duty to join, but it is a measure of self-protection, the neglect of which is akin to suicide as far as the industry is concerned.

I am astonished that every beekeeper in every state is unable to see so evident a proposition. It is because so many associations are weak in membership that lawmakers attack them. Let these organizations once represent all the beekeepers of a state and we will hear less of attempts at injury to the industry.

Usually the cry of the beekeeper who fails to become a member of his association is that it has not helped him in some direction that he fancied it should, or that it has failed to direct legislation in a manner that he thinks it ought to have been done. The trouble is that these beekeepers do not see that they are the ones that are to blame; not the member of the association. By withholding their membership, they have curtailed its power and rendered it unable to do the things they think it should have done.

Let all beekeepers unite for the self-interest of the whole and there can be no doubt of their ability to get their own way far more frequently than when they keep apart and prosecute petty warfare against each other.

Any beekeeper who reads this and is not a member of his association will be surprised at the good time he will have at the meetings of the associations and the abundance of information he will receive and at the discovery he is pretty certain to make of how narrow the world was in which he had hitherto been living. To stay at home and never learn what other beekeepers are doing is to dwarf the soul in a way that can never be realized until there is a change in such tactics. Others can see the narrowness, but the victim is blind as a bat in noonday light.

Where one's means are so limited that the paying of \$1.00 to become a member of an association would make hardship upon him, then, of course, there would be an ample excuse for not joining, but he should not expect to reap the rewards that others have fought for.

All beekeepers' brains need to be fertilized with the thoughts of others in order to do their best work, and no beekeeper can do his best who pursues his methods unchanged throughout life. The world is steadily moving forward, and unless the beekeeper adds to his knowledge the

experience and knowledge of others, he will soon be as extinct as the Dodo bird.

Would Like to See a New Cover Each Month

We liked the blue cover on the March issue. Would like to see a new color each month. We believe the new color attracts attention quickly, also arouses curiosity to see and know the late news inside.

When the beekeeper opens the envelope and sees the same color he will lay it aside to read later, but if the color is different he will start reading at once. He is like a little boy—he thinks he has a new book and would like to see what is inside.

We ourselves are always eager to open the envelope to see the new color of the American Bee Journal. There are many other beekeepers who do the same way, so we say let's have a new color each month.

Oplinger Brothers, Indiana.

Essay Contest for Children in Southern California

Those who made arrangements for the 1929 California beekeepers' convention, at San Diego, deserve much credit for inaugurating an essay contest among the children of southern California. The subject was: "The Honeybee." Announcement was made recently that twenty-six of the young people of that part of the state have received prizes for their excellent work. Helen Dale of Point Loma, and Alice Angel, of Mesa Grand, are named as leaders in the contest. Messrs. R. R. McLean and Fred Hansen are credited with promoting the contest.

In the report of the convention, comment was made in regard to the excellent paper that was presented to the convention by a teacher of the San Diego schools, Mr. Scott. Nature study is receiving a sane and wholesome attention under the leadership of this gentleman, and bee culture—that is, the scientific aspect of the subject—is not being neglected. An essay contest of this kind not only offers a fine opportunity to develop the educational and cultural possibilities of bee culture, but it also furnishes a legitimate channel of publicity that is the very best of its kind. Correct thinking about bees and honey will lead to a better knowledge of the value and place of honey in the daily diet of human beings. And with the increase of that kind of knowledge the beekeeper will inevitably come into his own.

R. M.

Miss Annie D. Betts, Present
Editor of the "Bee World"



It is hardly necessary to introduce Miss Annie D. Betts to our readers. She has been known as a scientist in the study of bees for a number of years. She was one of the original members of the Apis Club, organized in England by Dr. Abushady, over ten years ago. She took the helm of the "Bee World" at the death of Cap. J. B. Morgan, who was its editor in the summer of 1929. She has attended many international conventions of beekeepers and has been a correspondent of the American Bee Journal for some time.

When we asked for her photo, she wrote us:

"I began taking an interest in bees—a cautiously distant one—at the age of ten, when my father obtained his first colony. But it was not till a few years later that I owned bees myself. My first published investigations were on the sources from which the bees obtained pollen (1908-12). I have been a beekeeper thirty years."

Consigning Honey Is a Mistake

The biggest marketing mistake a beekeeper can make is to consign honey to a distant commission merchant, even though he sets a minimum price on it. Even then he will probably have it returned at his expense or have to sacrifice further.

The commission merchant's business is to sell, and he will do this regardless of the price obtained, for he has to get his commission, cartage and probably storage. The shipper will be lucky if he breaks even. I have known some that did not.

On consignment the shipper is not the only one that suffers. This honey is shipped into a territory that is

probably already adequately supplied by local beekeepers. As a result, prices tumble, and so does demand, as nothing affects demand like unsettled prices. I have known this to happen in Chicago and to the sorrow of beekeepers within a radius of many miles. I have felt the effect of it in a market three hundred miles away. The only way I could compete was to preach superiority of the home product and personally guarantee the honey to reach the grocer's counter in perfect condition.

I find these two points great arguments. The first one is always good. In the second I find that shipping damages were slowly settled and with difficulty. In my case I guarantee the honey (comb) to reach the customer in perfect condition. If it does not, there is no argument; I simply ask the amount of the damage and deduct it from the bill regardless and without question. You will find your customers like this. In this way I competed successfully with consignment shippers.

T. R. Stewart, Indiana.

Septicemia of the Honeybee

(*Bacillus Apisepticus*.)

This is the title of a paper by C. E. Burnside, assistant Apiculturist, Office of Bee Culture in Washington. We quote from it:

"Beekeepers are aware that adult bees at times suffer from disturbances which take a considerable toll from the population of the infected colonies and consequently from the honey crop. Owing to the less apparent serious nature of diseases of adult bees, they have received much less attention from investigators than have the diseases of the brood. No wide-spread outbreaks of adult bee diseases have occurred in America such as that caused in England by the parasitic mite *Acaris woodi* (Rennie).

Since the work of Zander in 1909 on *Nosema apis*, a number of other micro-organisms have been found which cause diseases of adult bees. However, the regrettable fact still remains that in the greater number of cases when bees, which appear to have died abnormally, are examined by laboratory methods, no cause for the trouble can be found. It is evident, therefore that there is a need for further study of the diseases that affect the adult bee.

Septicemia of adult honeybees is an infectious disease caused by an actively motile bacillus found in the blood, which causes the death of many bees and thus tends to weaken colonies.

The percentage of deaths in an individual colony is comparatively small and it is seldom that a colony is destroyed by it. Heavy infection is usually limited to one or a few colonies within an apiary, although the disease can usually be found readily in other colonies.

The losses which result from septicemia are less than from American foulbrood, European foulbrood, or from *Nosema* disease, and perhaps may be more comparable to the losses from sacbrood. Unlike *Nosema* disease, bees with septicemia die quickly, thus at any one time but a comparatively few infected bees can be

found. A bee infected with septicemia dies within a few hours, while one with *Nosema* may live for days. On the other hand, no serious outbreak of septicemia has been reported.

In septicemia the parasite multiplies and spreads within the blood of the infected bees.

In sterilized wet humus soil, kept in flasks in dim light, the organism remained alive for more than eight months. The organism dies out quickly upon drying, and in water which is allowed to evaporate is dead in less than a day after it has become dry.

The organism suspended in water or dilute sugar solution was fed to bees in cages and in colonies, with low percentage of infection resulting usually from 3 to 10%. Dried material containing the organism did not produce any symptoms of septicemia. When the organism was used wet, the resulting deaths of adult bees were high.

In addition to the occurrence of *Bacillus apisepticus* in the blood of diseased and dead bees, it was also isolated from the soil. It was found present in abundance in moist humus soil near infected colonies. At a distance of three or four rods from colonies it is present in lesser degree, while it is comparatively rare in sandy soil exposed to direct sunlight. When water was used with which soil from near infected colonies had been washed, the percentage of deaths with four trials was 10%, 6%, 6% and 0%. Cultures of *Bacillus apisepticus* isolated from the soil were found to be as virulent as cultures from naturally infected bees.

Inoculation seems to be through the openings in the body rather than through the mouth parts. Infected bees refuse food and progressive weakening continues until the ability to fly is lost. During this crawling stage the movements become uncertain and the bees frequently fall. Eventually they become unable to

right themselves and die lying on their back or side.

After death, putrefactive changes occur rapidly and even with the most careful handling the appendages become detached and the body sections fall apart. Soon after death a characteristic odor of bees dead of this disease is present, the odor disappearing upon drying.

Experimental evidence indicates that *Bacillus apisepticus* may enter at the spiracles and reach the blood through the walls of the trachea, or tracheoles. In order that infection may occur the organism must be present in a wet condition. Whenever bees come in contact with water or wet substances in which the organism is present infection may result.

The presence of *Bacillus apisepticus* in the soil has been demonstrated. Infection has resulted in three of four experiments when bees were moistened with water with which humus soil had been washed. In nature it would seem that bees might become infected whenever they came in contact with moist or wet soil or with water which is contaminated from the soil. The soil about the apiary, if moist and shaded, is especially apt to be infected from bees dead of septicemia. Although in experiments the disease was not transmitted within the hive, it would seem that this might be possible under extreme conditions of moisture, as sometimes exist in bee cellars or in colonies in early spring when the hives are not thoroughly cleaned of dead bees. In the Government apiary at Somerset, Maryland, and in other apiaries from which bees were received the greatest number of infected bees were found in colonies on low shaded ground. Only an occasional infected bee could be found in colonies on higher soil exposed to direct sunlight for the greater part of the day.

Samples of bees dead of septicemia have been received from all over the United States. It may be assumed that it is present wherever bees are kept.

American Beekeeping Literature

Efforts are being made to accumulate beekeeping libraries at the Texas Agricultural Experiment Station, San Antonio, Texas; at the University of California, the University of Minnesota, Cornell University, New York, and in the Beekeeping Department at the University of Wisconsin.

The American Bee Journal, at Hamilton, Illinois, has been the pioneer in this work, and at the present time they undoubtedly have one of the most complete collections of American beekeeping literature. However, they do not have single copies

of some of the old American bee magazines, and I hope that we may stimulate our American beekeepers to search through their attics and honey houses for copies of old American bee magazines, and to send them in to one of the libraries mentioned. It is not important that this material be in any particular library, but it is extremely important that it be preserved for future generations. And this can only be done in fireproof buildings where the material is catalogued and taken care of by librarians. One journal in particular about which we are able to learn little or nothing is the "Maine Bee Journal," published between 1880 and 1886. Much material has been destroyed and no doubt there is more that may be destroyed by burning or being sold for waste paper, unless every beekeeper can be encouraged to hunt out this material and send it in for permanent keeping.

The Dr. Charles C. Miller Memorial Library, started by national endowment and contributions, now contains over three thousand serial volumes of bee magazines and approximately two thousand books and pamphlets from all parts of the world. Let us hope that our beekeepers will continue to send in old material. We are particularly in need of numbers to complete our files of the "American Apiculturist," "The American Beekeeper," "The Canadian Bee Journal," "The Beekeepers' Guide," "The Beekeepers' Exchange," and "The Beekeepers' Magazine."

SAVE FOR FUTURE GENERATIONS!

H. F. Wilson, Custodian,
The Dr. Charles C. Miller Memorial
Apicultural Library, the University
of Wisconsin, Madison, Wisconsin.

Flour for Pollen

I am interested in your answer to "Rye Flour as Pollen," page 86. I believe your answer is correct.

I have a fine colony of bees at my home, only one, my pets. I divided this last fall and must have taken out all the combs containing pollen. February 1, I was looking through them and the bees were flying all over the yard. They did not have a single cell of pollen, and there is none to be had for some time yet.

I gave them a pan of wheat flour, and the way they loaded it up and went to the hive was something to see. On February 3 there was a frame well filled with eggs; February 6 these eggs had hatched.

The bees had plenty of stores, and immediately after the flour was given to them, they went for water. Now, if any bees come out of the cells, they will be produced entirely on wheat flour instead of pollen, and it will be just that regardless of what scientists may say about it.

J. B. Douglas, Arizona.

Dr. A. Z. Abushady, Editor of the "Bee Kingdom"



"The Bee Kingdom" is a new monthly review of beekeeping published by Dr. A. Z. Abushady at 9 El Moez Str., Matarieh, Cairo, Egypt. Dr. Abushady, it will be remembered, originated the Apis Club and published the "Bee World," a magazine which has since proved to be one of the finest ever produced.

Dr. Abushady had to return to Egypt, where his father lived, leaving the "Bee World" to be continued in England. It is now under the editorship of Miss Annie D. Betts.

"The Bee Kingdom" is published half in English and half in Arabic. Whether this will prove a profitable venture or not, the magazine is most interesting from this point of view. Dr. Abushady is not only an accomplished apiculturist, but he is also one of the outstanding poets of the Arabic language and a scientist of considerable reputation both in his own country and abroad. We are glad, indeed, that he is continuing his interest in beekeeping and is making it possible for beekeepers in his part of the world to have a magazine of their own devoted to their industry.

The subscription to the "Bee Kingdom" is 6 shillings, which corresponds to \$1.50 in our money. We wish Dr. Abushady and the new magazine every success.

There May Be More Like Leona

I am the ten year old daughter of a professional beekeeper and I read the story called the "Adventures of the Bee Fairies" to my younger brother and enjoy them very much. We hope you will continue publishing stories for children.

Leona Nicolaysen, California.

Cornering the Microbes of the Apiary—Part One

By H. F. Wilson and G. E. Marvin

Like fleas on a dog, the small microbic life among bees and their products are an ever-present disturbance, unseen and mysterious. Let's unravel some of the mystery.

MAN is ever looking for new facts—peeking here and there, digging into the mysteries of nature and the world in which he lives. The scientific investigator slowly searches out the truth in very small pieces and then adds each new piece to the picture already made so that he can analyze what the next piece should be like. And when he has erected a structure that appears to be useful, he passes it on to his fellowmen, either in a scientific treatise for the scrutiny of his coworkers or in a popular article in one of the trade journals for practical use.

Ancient records show that beekeeping is our oldest source of pure sugar, and therefore may be classed as one of our most ancient forms of animal husbandry, and agriculture. Unfortunately, our intimate knowledge of the honeybee and of honey has been accumulated very slowly, and from new facts being brought to light each day, it is quite evident that there is still much to be sought for. Although we may feel that we know enough about bees for practical honey production, our knowledge of bee behavior is quite elementary and our knowledge of honey comparatively slight.

To the beekeeper it seems quite simple to take a colony of bees and produce a crop of honey. Under favorable conditions the problem is not difficult. But who is to decide whether or not the conditions are most favorable and whether the beekeeper has been able to produce a maximum crop? Many start with bees believing that the bee business is simple. But sooner or later every beekeeper begins to experience the troubles of various sorts that are found to interfere with profitable honey production, and thousands of people who start with bees never get beyond the first one or two seasons. Bee diseases, poor honeyflows, and improper manipulations of bees in critical circumstances continually appear to offset the success of normal favorable conditions.

One of the reasons why our knowledge of bees and beekeeping methods as well as of honey has developed very slowly is that a great part of the observations concerning bees have been made by practical beekeepers, who, in the majority of cases, lacked a fundamental knowledge of the elements of biology, chemistry, physics, soils and climate. And the scientific investigations have been carried on by zoologists, chemists and physicists, who, knowing

Some of the most important search into the small life of the apiary has been done during the past few years by H. F. Wilson and G. E. Marvin, of the University of Wisconsin. We are happy to present this series of articles from them, which will tell us, in words we can understand, some of the facts about disease germs, fungi, yeasts and molds.

nothing about bees, were not able to correlate science and practice. The problems of beekeeping lead into many fields of science, of which zoology, botany, physics, chemistry and climatology are the most important, and in each of these sciences our problems lead us into micro-methods, which can be studied only by technically trained men.

The average person is perhaps not interested in the minute details of a new discovery or invention and is satisfied to make practical use of such discoveries and inventions without making any attempt to learn the scientific principles of operation. So, in a similar manner, only practical knowledge of beekeeping has been passed on to our beekeepers. We might say that every practical beekeeper is a potential investigator. But, in the majority of cases, the beekeeper's lack of scientific training and adequate apparatus prevents his making accurate observations. And, unfortunately, the average scientific worker usually has a feeling that his experiments are too technical for the beekeeper to understand, and custom requires that his work be recorded in a scientific journal in order to receive recognition. Most of our scientific workers, because of their special training, are not fitted to prepare a popular account of their work, and therefore much that has been done in fundamental beekeeping research requires many years before reaching the beekeeper, and during the period of transmission may be so changed that it is incorrectly quoted to the beekeeper.

Bee behavior and the breeding of bees have been well worked out in practice by American beekeepers, but without their learning much of the biology of the bee and the possible reasons for the manipulations that they undertake. Bee diseases have been in a like manner discussed at length in our bee journals and satis-

factory methods of control developed, but without the beekeeper having received an adequate knowledge of the organisms which cause the disease. This condition, we believe, is one of the causes for much of the futile effort wasted by individuals in attempting to carry on successful beekeeping.

In a search of the literature on honey, one finds all about how to make honey wine and a few accounts of chemical analysis of honey, but no one has yet made a complete detailed study of honey, tracing the changes which it undergoes while being carried from flowers to the honeycombs and then on through the process of ripening.

As near as we can find out, there is no absolutely accurate method of analyzing honey, and the per cent of moisture in any given sample of honey is found to vary from 2 to 5 per cent with all recognized methods of moisture determination.

Our lack of knowledge concerning honey is the greatest handicap to successful marketing, and until we have become more accurately informed about honey and its variability, we cannot adequately prepare honey for marketing, nor can we tell how to care for it during the process of bottling, transportation and storage.

We believe further that much of the trouble between honey buyers and beekeepers can be avoided when the beekeeper becomes intimately acquainted with the physical and chemical properties of honey and is able to prepare honey for the market so that it will be of uniform color, according to definite grades, and has been scientifically produced and prepared for the market.

The average beekeeper knows that honey sometimes ferments or sours, but he may not have any understanding of the cause. He may perhaps be a beekeeper who makes every effort to have his honey thoroughly ripened and is generally successful, but now and then there comes a year when his honey is not up to standard and ferments in spite of his best precautions. He may be told that his honey contains too much moisture, and someone might question his methods, and no doubt he would be accused of taking his honey off and extracting it before the cells were all sealed. Even though he could not have avoided such a condition, it certainly would be satisfying for him to know that his methods were not at fault.

Relative to the question of disease

inspection and the eradication of bee diseases, we believe that much of the difficulty which arises between the inspector and the beekeeper in the matter of bee disease control can be avoided when the inspector has been given a detailed account of the micro-organisms associated with bees, their methods of development, the manner in which they reproduce and how they are able to carry over through periods of unfavorable conditions.

In the process of development of better beekeeping we must acquaint our beekeepers with the minute physical, chemical and biological factors involved, and when this has been done the mysterious happenings in the bee colony will soon become commonplace. The relation of micro-biology to certain problems in the beekeeping industry is therefore important and should be common knowledge among beekeepers.

It is our hope that in several articles to follow we may present a picture of micro-biology to our beekeepers that will make it possible for them to more fully understand and appreciate the micro-organisms which affect the honeybee and her products.

In order that we may make our discussion as clear as possible concerning the micro-organisms connected with beekeeping, we shall include some notes on the classification of plants and animals and their development.

The science of biology deals with the study of life, and there are two main divisions—zoology and botany. Zoology is the science which deals with animal life, and botany with plant life.

Both zoology and botany are divided into many special divisions which relate to studies of the internal and external structures of animals and plants, to the minute details of their different organs and the manner in which they function. All plants and animals are divided into smaller groups according to their structural characters.

In early times, each investigator attempted to make a complete study of both plants and animals. Later it was found that one individual could accomplish very little in such a broad field, and they began to limit their studies to either plants or animals. As our knowledge of plant and animal life increased, it was found that even one of these fields was too large and the work of each investigator became more and more constricted, until at the present time we find many men and women working on a single organ of a plant or animal. In beekeeping we find specialists working on the anatomy and physiology of the honeybee, the function of different glands or organs, single phases of nectar secretion, the diseases of adult bees, the diseases of the larval stages, the ripening process of honey

and such questions as honey fermentation and methods of handling honey in storage.

For convenience in understanding the nature of the micro-organisms connected with beekeeping, let us summarize the classification of plants and animals. In plants we find such divisions as trees, shrubs, herbaceous plants, mosses, ferns, and a number of other groups. In the animals we find the highest group to be the mammalian forms, or those which produce milk and suckle their young. Other classes are birds, fishes, and reptiles. And below these, other more primitive forms in which there is no spinal cord. At one end of this classification, plant and animal life meet in intergrading single cell forms that are extremely difficult to classify because of their microscopic size (bacteria and protozoa). Beyond this, there exist elements of life so small that they cannot be distinguished by any of our present day microscopes. These elements are called virus diseases and are known only by the symptoms they cause in diseases. Sacbrood of bees is one of this type.

On one side of the dividing line, animal life begins with a minute, one-celled form known as protozoa; and on the other side plant life begins with single-celled individuals known as bacteria, and generally classified with yeasts and molds, as fungi. The protozoa are then to be considered as the lowest forms of animal life, and the bacteria (fungi) the lowest forms of plant life.

In a series of papers to follow, all the important micro-organisms of both plant and animal origin, affecting the bee industry, will be discussed in a popular manner which we hope will give a much better understanding of them and their relation to some of your beekeeping troubles.

What Can a Local Association Do?

By L. T. Floyd

The outstanding address at the Manitoba beekeepers' convention of 1930 was the report of one of the local association secretaries. It only took a few minutes of time, created no enthusiasm, and to many passed unnoticed; but after thinking carefully over the addresses of this two-day meeting which some 175 delegates attended, this short address, in my opinion, stood out as the most important.

The report of the Secretary of the Springfield local was something like this:

"We increased our membership in 1929 until now we have twenty-one paid-up members. We held a picnic and field day at the apiary of one of our members which nearly the whole community attended. We

served free ice cream and coffee as an attraction; the visitors brought their basket lunches. When the Government Inspector visited the district we sent one of our members with him to help him locate all the beekeepers in the district. We collected all the wax in the district and sent it away to be manufactured into comb foundation, thus saving more than the annual fees in cheaper transportation and manufacturing rates. Through the Association we purchased several hundred packages of live bees, thus effecting a great saving by buying in large quantities and in cheaper transportation rates, the member purchasing one package getting the same rate as the one buying one hundred. The members were given an annual subscription to the American Bee Journal as a premium. A substantial contribution in cash was given the Agricultural Society to provide cash prizes for classes for bee products at their annual fair."

This was surely a worth-while report. It comes from a district with a very fine lot of cooperators. How is it that they have been so successful? Frankly I do not know. I visit frequently in this district and attend their field days and meetings. They never waste time admiring themselves; rather the opposite is the tendency. The attitude they seem to assume is that we did nothing last year and will try to make up for it next year. While they seem to go about it in a good-natured way, they never hesitate to criticize the Government's attitude toward them, the action of their officers as well as the individual members.

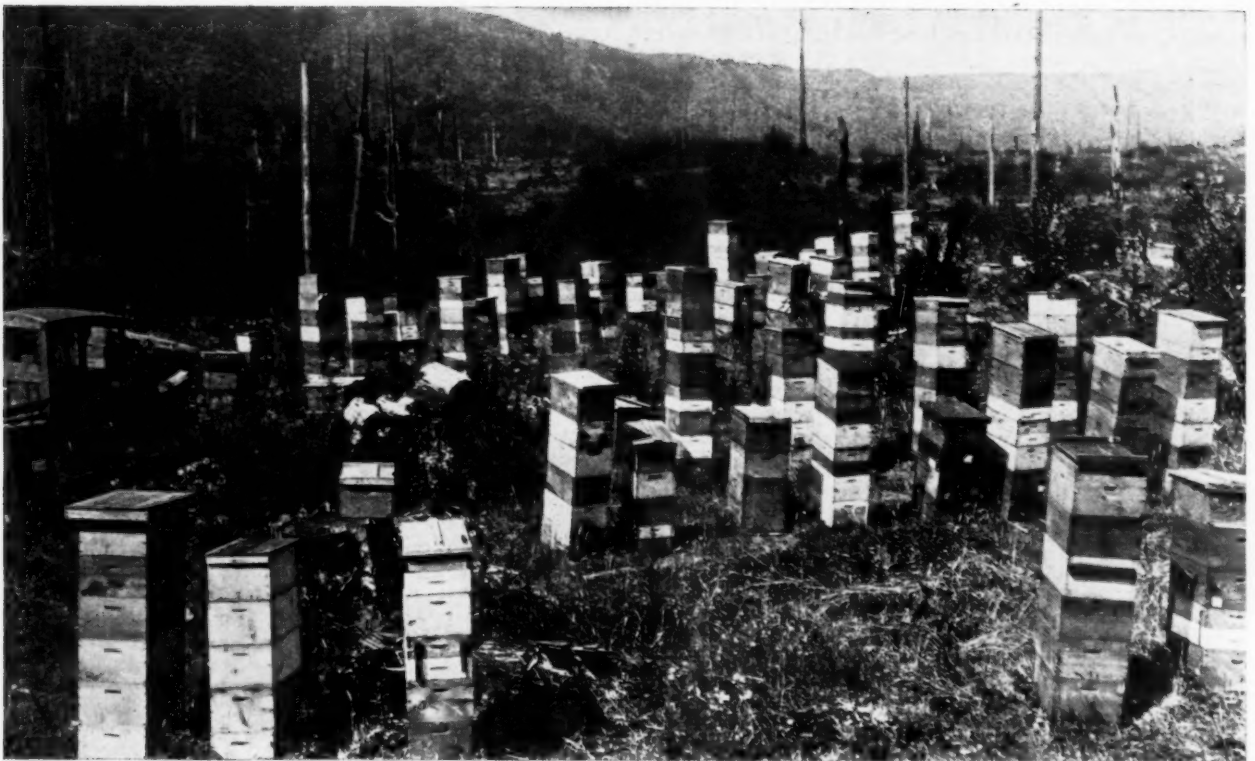
If I am permitted to give an opinion, it is this: Many of our organizations have developed into self-admiration societies and become so satisfied with past accomplishments that they are of no service to the community they are designed to serve. The same charge can perhaps be made regarding those of us who occupy government positions. I believe that the present, perhaps more than any other period, is a time for heart searchings and a good time to take off our coats as this little association has done and make a showing worth while.

Big Crops—Why Not?

On page 29 of your January, 1930, issue you seem just a wee bit skeptical of Mrs. Zimdar's 300-pound average. In the fall of 1920 we extracted an average of over 300 pounds of honey, spring count, and had a 100 per cent increase in colonies.

Three-pound packages yielded well over 200 pounds each and went into winter quarters in fine condition in 1929.

J. Rowland.



Kerensky bees, set in a typical Northwest bee yard. The surrounding hills were covered with pink-hued fireweed when this picture was taken.

The Kerensky Bee

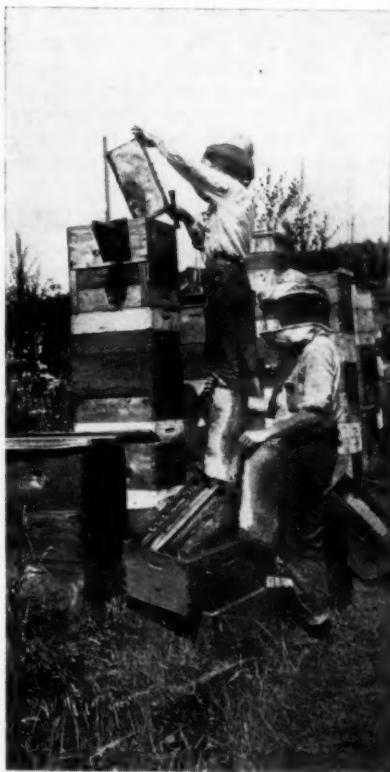
An Example of What Breeding from the Best Will Do

By Helen Steiner

DURING the political turmoil in Russia just after the European war, Russian princes, counts, nobles, queens, and everyone with a stamp of nobility had to flee to other countries not quite so harsh. One interesting item was the cutting out of the word queen in all Russian literature relating to the queenbee. I do not know if they attempted to kill the queenbees, but I want to tell you of one Russian queen that immigrated to our shores as a result of the new Russian Governemnt.

Some years ago, in Harbin, Manchuria, sixty Russian emigrant beekeepers formed an association to better beekeeping in their adopted home. Wanting to know of the modern practices of the American beekeeper, these hard-working pioneers put up a fund to send one of their number to the United States. J. W. Chekurov was chosen.

After making all the necessary arrangements and having been granted permission to bring a few of his bees to America for experimental purposes, he made five little hives (about half the size of an ordinary two-pound mailing case), in each of which he brought a handful of bees and a laying queen. Three small combs fitted into each cage.



Mr. Cox and his son Roy, working in their Kerensky yard.

On entering Japan, the Japanese customs were not very well acquainted with bees and were at a loss to know how they were going to let so many tiny individuals through their gates. On being told they were valuable little insects and that approximately five hundred bees were in each box, they decided to charge a definite amount for each bee (a cent a bee, or \$25.00 for the five cases). One of the little swarms died on the way from Japan to Seattle and another died on arrival.

Mr. Chekurov began the study of English immediately. Through his teacher he came in touch with Mr. H. H. Benton, claim agent for the Northern Pacific Railway, and a bee enthusiast. Mr. Benton had sixty colonies of his own and was very much interested in the Russian bees.

One of the three remaining colonies swarmed before they began to work and they were lost. Mr. Chekurov then presented Mr. Benton with one of the two colonies left, informing him that it was from one of his best honey-gathering strains in his apiary near Harbin.

Mr. Benton tried to induce Chekurov to introduce his remaining queen to a strong colony so she would come through the winter. However,

he only fed her a little syrup and added a few bees, leaving Seattle in December with his small nucleus for Lansing, Michigan. This queen died the following spring.

Mr. Benton, being busy and keeping bees only as a sideline, persuaded W. L. Cox, of Elma, one of Washington's foremost beekeepers, to try out the new bees. Mr. Benton brought the colony to Mr. Cox, headed by the new grey queen, on May 8, 1924.

Today a fine apiary stands on a hillside surrounded by a sea of pink-hued fireweed. Three hundred colonies of bees headed with progeny from this old queen of Russia. The bees have proven very quiet, good honey gatherers, not excessive swarmers, are hardy winterers, disease resistant, and seem more able to cope with our late, damp, cold weather which is so prevalent in the Northwest.

Locally, the fame of this grey bee has spread to quite an extent. One of the traits that appeal to the majority of people, of course, is the quiet disposition of these bees. During the latter part of this summer a bee picnic was held in the yard and the visitors taken around, colonies opened and worked over.

A few weeks previous, Mr. Cox informed the writer that she could put a few of her bees in the northwest corner of his apiary. Now, my bees are a cross between the black and the Italian and would really be classed as vicious. The visitors at the picnic had not been told of these intruders and, being interested in the grey bees, they did not go to this part of the yard.

Someone was evidently anxious to get a start of their own with these quiet bees which were not easily provoked to anger, and decided to help themselves some time during the night. As it happened, most of the grey bees were strong colonies and not convenient to take away, but among my bees were several small hives that were just the thing; so one of these small hives was picked up and carried as far as the entrance of the bee yard, and then they gave the intruder such a warm welcome that they were set down very unceremoniously in the middle of the drive and left. Someone had been sadly disillusioned.

Last year Mr. Cox harvested about 153 pounds of honey per colony from the grey bees, although it was a poor season. The present spring brought heavy losses to Pacific Coast beekeepers, with colonies slow in building up. The Kerensky bees, as Mr. Cox calls them, were fairly strong and able to get out and gather nectar when others seemed not hardy enough to withstand the damp, chilly wind. During the summer they have built

Bert W. Hopper Gone



Bert W. Hopper of Rocky Ford, one of the best known beemen of Colorado died suddenly at Pueblo, where he was attending a ball game. During the excitement of the last inning Hopper was suddenly stricken with paralysis. Friends rushed him to a hospital where he died the same evening.

Bert Hopper was widely known as a successful beekeeper. At one time he managed about 2000 hives in the valley of the Arkansas River near Rocky Ford. He developed a large business in the buying and selling of honey also.

For some time Mr. Hopper had talked of retirement and recently had sold his business and his home in Rocky Ford, and was preparing to move to California. He is survived by his wife and two daughters to whom is extended the sincere sympathy of a large circle of acquaintances.

up into strong colonies and have given a good yield of fireweed honey for this year, with a higher average than any other bees I know of in this locality.

Mr. Cox is to be commended, as it has taken years of attention and patience on his part to keep these bees true to their original stock.

Washington.

"Fungus Diseases of the Honeybee"

This is the title of a technical bulletin, No. 149, issued by the U. S. Department of Agriculture and written by C. E. Burnside, Assistant Apiculturist at the Bureau of Entomology. It is a discussion of the history and occurrence of fungi in the apiary.

Fungi were isolated from bees selected from widely different sources. The investigation shows that parasitic fungous species occur on bees

and brood that may cause quite virulent diseases. Bees are attacked when spores of the disease-forming fungi are taken into the alimentary canal, where they germinate within the food contents, attacking the softer tissues.

The symptoms are not different from those of other disturbances in adult bees. Infection may come from beekeeping equipment, dead bees, mouldy combs, mouldy fruits and other substances that contain high sugar concentration. Badly moulded combs and equipment are advised to be disinfected by being washed or dipped in a 20 per cent solution of formalin in water or by being exposed to formaldehyde gas.

Forty Thousand Miles to Make a Pound of Honey

In one of his lectures, Dr. Harry Emerson Fosdick made the remark that the bee travels an average of 40,000 miles to make a pound of honey. One of our readers questioned this, so we submitted the question to Dr. O. W. Park, of Ames, Iowa, who has done so much work recording the flights of bees. We give Dr. Park's reply herewith:

"In reply to the question regarding Dr. Harry Emerson Fosdick's statement, I will say that in my judgment the statement is conservative. I am of the opinion that 40,000 miles probably is somewhat below rather than above the average distance traveled by the bee in producing a pound of honey. In reality, of course, a pound of honey represents the lifetime work of many bees instead of a single individual. The three most important factors in this problem are: (1) Distance traveled for the round trip; (2) net load carried; (3) per cent of sugar in the nectar.

All of these factors are subject to wide variation, but the following set of figures will be admitted to represent conditions which are better than average: (1) Distance, two miles per round trip; (2) net load, 35 milligrams; (3) nectar containing 50 per cent sugar.

"By making the necessary computations, it is found that on this basis the bee must make 12,960 trips and travel 25,920 miles, or once around the earth, in gathering a pound of nectar which in this case is only 50 per cent sugar. Since honey is 80 per cent sugar, it will be necessary for the bee to gather 1.6 pounds of this nectar to make one pound of honey, and in so doing the total distance traveled would be 41,472 miles.

"It is to be expected, therefore, that under favorable conditions the bee would fly approximately 40,000 miles to make a pound of honey. Under unfavorable conditions, the distance would be increased."

How to Use Formalin Solution in Sterilizing Combs

By J. I. Hambleton, United States Bee Culture Laboratory

(We have had so many enquiries as to the best way to disinfect the combs that have been in foulbroody hives, and we have had so little experience with this matter ourselves, that we have thought best to refer the matter to the U. S. Apiculturist at Washington, Mr. James I. Hambleton. The following reply from him will warn our readers against accepting too readily any method as positive cure.—Editor.)

* * *

I do not blame you at all for being somewhat confused as to what recommendations to make with regard to disinfecting foulbrood combs with formaldehyde. So many articles have been printed in the past year or so, dealing with various methods of using formaldehyde, that we think many of the beekeepers and even some authorities are quite at sea.

Unfortunately, most of the so-called "new" methods which have been advocated recently have been based on hasty work conducted by men who were really not qualified and who did not have the facilities for carrying on scientific investigations. So much work has already been done on American foulbrood that new results will naturally come slowly and will, for the most part, have to be obtained by highly trained men. It is not like plunging into a virgin field.

We are still working on the use of formaldehyde gas and are not making any recommendations whatsoever with respect to its use. We are advocating burning, except in unusual cases where a considerable saving can be made by treating infected material. The bad feature, of course, in the treatment of any infected material is that it must of necessity include shaking the diseased colonies, and we all know the dangers of this when in the hands of an inexperienced beekeeper. We, therefore, do not like to recommend that any beekeeper maintain a series of treating tanks and other paraphernalia for the routine treatment of diseased material.

Where American foulbrood is found in a large apiary and disease is present in a large percentage of the colonies, it undoubtedly pays to shake the colonies and salvage as much of the material as possible through the medium of treating the combs, and for this purpose we have been recommending a 20 per cent water formalin solution or the Hutzelman solution. Both seem to be equally efficacious. In both cases, all cappings, both of honey and brood,

should be removed and any honey extracted before placing the combs in the solution.

The period for immersion should not be under forty-eight hours, and it is better to extract the excess solution after this period of immersion and allow the combs to air-dry rather than to wash the combs for the sake of removing the excess formaldehyde. When the combs are allowed to air-dry after removing from the extractor, disinfecting solutions seem to continue their action for some time afterward, and this increases the period of sterilization.

We believe that after an apiary has had its first thorough overhauling all cases of recurrence should be burned, whether these result because of the failure of the sterilizing solutions or because of the faulty manner in which the colonies were shaken.

Migratory Beekeeping for Kansas

By Leroy Churchman

We have had our first experience in migratory beekeeping the past season and I have no knowledge of anyone else practicing it in this state at the present time. It was only an experiment with us, but we are greatly pleased with our results.

We live in the central part of the state and get an early flow from milkweed through May and continuing into our sweet clover flow in June. Our sweet clover flow most generally ends by the first of August. This ends our flows of light honey and most generally ends the season, unless we have enough rain through August to get a minor flow from pastured clover.

The past season our clover flow was shorter than usual. It rained most of the time it was in bloom, and when the rains let up the clover seemed to cease yielding nectar immediately.

We extracted all the white honey and moved the bees seventy-five miles west by truck into a heartsease district, where the heartsease was just beginning to bloom. It had been an ideal season for heartsease and we expected to get our winter stores at least from this source. Most of our apiaries were moved into this section; the rest we moved into some goldenrod pastures closer home, which was an experiment also.

The results were fine. The bees in the heartsease flow filled two hive bodies for winter, and produced one hundred pounds surplus per colony.

The bees in the goldenrod flow filled two hive bodies and produced forty pounds of surplus honey. The goldenrod honey granulates solid as soon as cold weather arrives and is very poor for winter stores, but the heartsease honey is very slow to granulate and is very fine for winter stores. So we exchange the goldenrod honey with the heartsease for wintering. In fact we replace all the light honey with the heartsease honey for winter stores. The heartsease flow lasts until we have a heavy frost, which was the first of November this year.

The queens laid fine through this flow and our bees went into winter quarters heavy with honey and with a fine force of young bees. The honey is very dark and strong and is not fit for table use. After our bees were all well supplied for winter from this source, we sold the balance of our crop to bakeries at 7 cents per pound in ton lots f. o. b. our shipping point.

This was all accomplished with a small expense and certainly was a big success with us.

Kansas.

(We have never enjoyed migratory beekeeping. But we made it a success when we were compelled to resort to it in years of scarcity owing to extreme drouth in the hills, while the Mississippi River bottom lands were filled to overflowing with fall flowers that grew after the overfall waters receded from the lowlands. The honey-producing plants were heartsease, Spanish needles, boneset, and a few other lowland plants. We had a good crop from these and would have had a better one had we not delayed too long in moving the bees. When we moved them the drouth had been so bad that the colonies had no honey whatever, and some of them did not even have much brood. But the migration set them to work in earnest. The bees appeared to become half crazy with earnestness. It was a delightful sight.—Editor.)

"Honey" — According to the "Herald-Examiner"

C. B. Cadwallader, assistant district sales manager of the American Can Company at Chicago, sends us a clipping from the "Herald Examiner" which discusses honey as follows:

"It is many years since Oliver Herford, being offered honey by a friend who said, 'This is from my own place,' asked delightedly: 'Oh, do you keep a bee?'

'More than a million Americans keep a bee nowadays; keep thousands of bees apiece, in fact. Honey is one of the great ingredients of a proper diet nowadays. And it tastes

better than ever. You can even get it flavored as you wish, the flavor depending wholly on what sort of flowers the bees are allowed to visit. "Eat honey and enjoy life."

We need thousands of similar statements, going around every day in every way, a la Coue.

Yes, the Indiana Public Can Be Trusted

I read with great interest the story by Robert B. McCain in the February number of the American Bee Journal on the subject "Can the Public Be Trusted?" Also noted your request to readers to report any similar experience.

We have had for the last two years a roadside honey stand on every state or railroad leading out of Indianapolis (fifteen in all). Fourteen of these have no attendant at the stands except when the motorist blows his horn, indicating his desire to purchase honey. While going about their daily tasks they are in sight of the stand but very little.

While our stands are not the self-serve style, yet they are loaded with honey for the purpose of display practically all the daylight hours in the summer time. In two years we have lost less than \$5.00 worth of honey by theft, with sales exceeding twenty-five tons. So, like Mr. McCain, our loss has been insignificant.

There is not much encouragement for thieves to steal honey, for they know they have a selling problem before they can realize cash. It is different with chickens and articles that can be marketed at any store. They seldom rob because of hunger, and we reason it this way: "that if they steal our honey to satisfy their hunger, it is just one of our contributions to charity." We caught thieves in three attempts, and in every case they were boys under sixteen years of age and on their way to the woods to camp.

The majority of people traveling through the country are honest, and when they discover someone who trusts them, I believe they go the limit to prove that they merit the trust. Our experience has proven beyond a doubt that the public can be trusted with honey. We expect to operate some of our stands this season the "self-serve way."

Orin Jessup, Indiana.

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They sell honey and are priced right.
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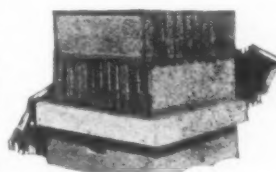
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Lewis and Dadant Bee Supplies are known throughout the land. We have everything you need to help you make the most from your bees

this year—every year.

Dadant's Wired Foundation and
Lewis Slotted Bottombar Frames on hand at all times.



We like rush orders as we buy in car lots and ship same day order is received.

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A Bee Paradise

The acreage of sweet clover is rapidly increasing in the Red River Valley and North Dakota, used for both pasture and hay. Beekeeping and livestock raising are growing at a corresponding rate. Lambs, wool, dairy products, and beef are produced on low cost basis on cheap lands. Following is estimated acreage of sweet clover in several North Dakota counties in 1928:

GRAND FORKS COUNTY	30,000 Acres	RAMSEY COUNTY	28,000 Acres
CASS COUNTY	25,000 Acres	TOWNER COUNTY	20,000 Acres
NELSON COUNTY	19,000 Acres	PEMBINA COUNTY	25,000 Acres

Conditions are equally favorable for bees and livestock. The best feed and forage crop is grown easily and production cost is low in comparison with other localities. It is claimed that sweet clover produces as high as 200 pounds of honey to the acre. The season extends from June until October. Honey of the finest clear quality is produced. Best authorities and experienced keepers predict that North Dakota will soon lead in honey production.

Write for FREE BOOKLET on farming resources of North Dakota
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E. C. Leedy, Dept. J.

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By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS**, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; 6, \$5.00; 12, \$9.00. Selected untested, \$1.25; 6, \$6.00; 12, \$11.00.

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

TO PREVENT EXCESSIVE SWARMING

I have five colonies of golden Italian bees. Last year I had three, and kept them from swarming till it was impossible to keep them longer. Then, right in the best white clover honeyflow, they started to swarm every day. I combined them so as to only have five hives, but so much time was lost I did not get the amount of honey I think I should. What can be done to hinder this?

ILLINOIS.

Answer—The prevention of swarming depends upon several conditions. First, you must have young queens in your hives, or else the bees will try to rear young queens to supersede them and they will swarm with the old queens.

Secondly, you must have very few if any drones. When the bees rear a large number of drones, they are in the way of the workers and incite them to swarm. Keep the drone-comb out of the hives and replace it with worker-comb or comb foundation.

You must also have plenty of room in the hive brood chamber for the queen to lay eggs, and plenty of room in the supers for the bees to store honey.

If all those conditions are fulfilled, there will be a minimum of swarming.

MANAGING BEES BY PROXY

I am producing part comb and part extracted honey and will be forced to be away from my bees from June 15 to August 2. A friend of mine, who knows nothing about bees, but is very capable, will do simple things for me, like adding supers.

I plan to leave most of the colonies in condition "A" or "B":

A. 1. A story of sealed brood (obtained by separating queen from brood nine days before) containing a sealed queen-cell, ready to hatch about June 19. 2. A shallow extracting super over the brood chamber to provide additional laying room for the queen and to prevent sections above from being capped with dark wax. 3. Two section supers, with bait sections in the upper one.

B. 1. Two solid stories of unsealed brood (obtained during the above mentioned separation of brood and queen). 2. A laying queen. 3. Two hive bodies with drawn empty combs.

1. Will the bees be likely to swarm?

2. If so, can the "B" colonies be prevented from swarming by moving them 20 to 50 feet about July 15? (On June 15 I will have each "B" colony about four feet from an "A" colony. If I then move a "B" colony on July 15, the field bees will fly to the "A" colony.)

The clover honeyflow is on here from about June 25 to July 25. I use ten-frame hives and have eight colonies.

I intend using an ordinary hot water tank five feet high and one foot in diameter as a settling tank. What would be a good coating for the inside, to prevent rust getting into the honey? Would paraffine be all right?

MINNESOTA.

Answer—As I have never tried either of the methods you propose to use, I cannot reply to your questions with positive assurance. I can only tell you what I think.

A. It seems to me that the shallow extracting super which you propose to supply on top of the brood chamber will be filled with fresh honey before the sections are filled. But you would be fairly sure of not having any swarming.

B. This would not give much opportunity for the bees to work in sections unless the season was extraordinary. I do not think the bees would be disposed to swarm in either case. Perhaps if you move the B

colonies to new spots so as to give all their bees to the A colonies, if done at the proper time, it will cause the latter to fill the sections well.

The painting of the inside of a tank with hot paraffine would positively prevent the honey from becoming tainted with rust.

WEAK COLONIES

1. I have four colonies that are weak. Do you think it best to double them together or requeen with Italian queens?

2. There seem to be plenty of bees, but not much brood; they don't work very strong.

Do you think it best to put comb honey supers beneath extracting supers, or put them on top?

4. Do you think it best when the queen is laying in the extracting super to smoke her down and put on a queen excluder?

KANSAS.

Answer—1-2. It may be that your colonies are short of food. It often happens in seasons where the weather is cool and wet. But if the queens are really getting old it may pay to change them. I do not believe that I would try to unite them this late in the season. Wait till fall, if they are still weak.

3. If you use both comb honey and extracted honey supers, put the extracted honey supers on top.

4. If the queen goes to the extracted honey supers to lay, I would confine her below with a queen excluder.

HIVING SWARM IN TOP HIVE

I have all my bees in double hive bodies. If they swarm, would it be all right to take the top hive body from the hive they swarmed out of, shake the bees off into the lower hive body, and add top and bottom boards and hive the swarm in this upper story?

NORTH DAKOTA.

Answer—I believe what you propose to do will work. I would suggest that you put the old hive on a new stand and place the swarm in that upper story on the old stand. Then you will have to add supers right off, for they will be pretty strong.

MAKING THREE COLONIES OUT OF TWO TO CONTROL SWARMING

I believe it was Dr. C. C. Miller who gave a plan whereby swarming was controlled by making three colonies out of two. As I remember it, he shook all the bees out of one colony into a new hive on the old stand. The brood was placed on the stand of the second colony, and the second colony was placed on a new stand. The bees returning to the parent colony of the colony shaken reared a queen, and thus there were three colonies instead of two, and swarming was seemingly given up for the time at least. Can you tell me if this is the plan as Dr. Miller gave it? Or, better still, can you tell me where I can find this plan described? I have hunted for the description of this plan in Dr. Miller's books, but I fail to find it.

MINNESOTA.

Answer—You are probably correct in stating that Dr. Miller gave the method you mention to make three colonies out of two, but he was not the originator of the process. Mr. Langstroth gave it in the early editions of his book, and you will still find it in our edition of his work, at paragraph 473 and the following.

The important matter is not to give any combs to build to a queenless colony, for

when they are queenless they are likely to build drone-combs. It may also be necessary to watch the colony which is building queen-cells, as it may want to swarm when the cells hatch, if it is strong enough and there is honey in the field. Otherwise there is no better plan to make two colonies into three.

HOW TO TELL DRONE LAYER OR FERTILE WORKER

I am just beginning with bees. One of my colonies has a few raised dark-colored cells in two or three frames, which I have found out to be caused by a drone-laying queen or fertile worker. How can I tell which it is, and what is the best thing to do to save them? MICHIGAN.

Answer—If there are only a few cells of drone brood, it is probable that this is laid by a drone-laying worker. A drone-laying worker is difficult to displace. If it is a queen, you should be able to find her. When a drone-laying queen is killed, it is not difficult to get the bees to rear another queen, by removing all the brood they have and giving them a comb of fresh brood with plenty of young larvae in it, from the best colony you have. Even if it is a drone-laying worker, you might try the same remedy. If they don't rear any queen-cells on this brood, it will be a rather hopeless case. Then I would put an entire swarm with queen in that hive, or unite them with a good colony.

REQUEENING—CHUNK HONEY

1. Should I requeen now or late fall, after honeyflow?
2. Will chunk honey inserted in jars of extracted honey that has been heated to 160 degrees cause it to granulate?
3. If you have any special data on extracted honey production, I would appreciate it, with anything else concerning swarm prevention methods. I am operating twenty-five colonies. KENTUCKY.

Answer—1. We prefer to requeen after the honeyflow. But if you have some worthless queens, the sooner you replace them the better.

2. We have never tried to insert extracted honey which has been heated to 160 degrees in jars containing comb honey. But we are of the opinion that there would be no granulation. However, we do not believe in heating extracted honey to such a degree. We believe that heating to 145 degrees would be sufficient, and the honey would be better.

3. Data on extracting and on swarm prevention may be found explained at length in our "The Honeybee," by Langstroth and Dadant. You will find it mentioned in our list of books.

COMBS BREAKING IN EXTRACTOR

I am running, this year, better than a hundred colonies, all in Modified Dadant hives. I want to produce about a hundred sets of 11¼-inch drawn combs, for use in increase next year. Now, I plan to use nine frames in each eleven-frame body, to get thick combs, thus lessening danger of cracking in the extractor. I use your 9-wire, 10 11/16" foundation in these deep frames, also use two imbedded horizontal wires. What I wish to know is this: Would there be any danger of sagging, do you think, in these extra thick, extra deep combs of honey—all new comb, too? As they are later to be used exclusively in the brood nest, I wish to run no risk of having sagged combs. I would have eleven made in each body, but for the fact observed last year, that it seems practically impossible to extract these deep combs without cracking them, if they are built eleven to the body, or even ten. MICHIGAN.

Answer—Trying to produce thick combs will only increase the danger of breaking



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Untested Queens 50c Each by Number ∴ Tested Queens \$1.00

2-lb. pkg. bees with queen, \$2.75 each; 10 or more, \$2.50 each.

3-lb. pkg. bees with queen, \$3.75 each; 10 or more, \$3.50 each.

2-frame nuclei with queen, \$3.50 each; 10 or more, \$3.25 each.

3-frame nuclei with queen, \$4.50 each; 10 or more, \$4.25 each.

These packages and nuclei are ideal for late increase. We are prepared to handle a large queen business during remainder of season. Prompt shipments. Safe arrival and satisfaction guaranteed.

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Knight's Queens and Package Bees

Line-Bred, Three Banded Leather Colored Italians

The best honey gatherers; gentle, prolific, and hardy. My queens are carefully reared and selected and guaranteed to be mated pure. They are really worth more than the average advertised. Shipments by return mail.

PRICES

Selected: One, 80c; 10, 75c ea.; 20 or more, 65c ea.

Write for quantity prices

Can still make immediate shipments package bees. Two-pound size with queen, \$3.50, delivered to you prepaid parcel post. Three-pound size, 75c additional.

All queens sent in large, six-hole cages unless the smaller size specified. No charge for clipping. No disease. Health certificate. Safe arrival and satisfaction guaranteed.

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Our Guarantee

All goods purchased may be returned if unsatisfactory and money cheerfully refunded. No questions asked.

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Gentlemen:

Without obligation on my part, please quote prices. I have _____ swarms.

_____ Hives _____ Sections

_____ Supers _____ Br. Fdn.

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Name _____

Town _____ State _____

Address _____

down in the extractor. In order to extract safely, when the combs are very new, it is only necessary to revolve the extractor slowly, removing a part of the honey on each side, then turning the combs again to remove the balance. If the combs are warm, there is no danger of breaking the combs unless revolved too fast, especially if you have wired combs.

If you managed to get the bees to build the combs thicker than the natural thickness, they would have to thin them down afterwards to rear brood in them.

We have never had trouble with combs breaking in the extractor, because we always regulated the speed according to the fragility of the combs and always did the work when the combs were warm. Try it.

KILLING BEES VS. SELLING THEM

I have some fifty stands of bees. I wish to destroy the bees and store the hives and equipment, as I have no one to look after and take care of them. Kindly advise me by return mail the best way, and what to use, to kill the bees. MONTANA.

Answer—The bees may be killed either by putting the hives in a closed room and burning brimstone in an iron pot, in sufficient quantity to asphyxiate them, or by putting each hive over a small pit in which brimstone is burning, at night.

But there will be brood left in the combs, and this brood will die and rot after the bees are killed. You will have to cut it out and burn it, too.

It appears to me that you ought to be able to sell those bees in the hives and make more out of it in that way. Had you written sooner, we might have found you a purchaser. It is rather late in the season. But if the colonies are healthy, it may still pay you to keep them till fall and sell them then.

Was This Flapper a Mind Reader?

The madam, the boss's wife, was saying the other day that all this stuff she has been reading about modernism in beekeeping reminds her of the cashier down at the big department store in the city the other day when she was shopping with the boss.

She said her and pa, as she calls him, were through shopping and when they paid their bill at the counter the cashier gal just layed it across her knee, hit it a rap with her fist, then scratched her initials in the center of the print which her rouged knee had made, and said to the boss, "There, sugar daddy, that record will hold in any court."

On the way home the boss was so glum, never talked or nothin', the madam spoke up, "Thinkin' about that gal?"

Now around our little village everybody calls the boss the "honey man," and what that cashier gal said had got his goat. He really wasn't thinkin' about the gal the way the madam meant, cause he answered, "How in the heck did that flapper, way down in that big city, know I'd been feedin' them bees sugar this spring?"—By the boy that works on the bee farm.



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Dependable Service on Standard Sizes

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Our Non-Sag Brood Foundation has given absolute satisfaction the past season. Not one word of fault, but any number of commendations. Our foundation business doubled last season, and we are ready to book your orders now. Write us for samples and prices for early orders, which will in all cases be as satisfactory as the quality of our foundation. We furnish a full line of hives, sections, and all other supplies.

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 A full sheet of foundation put in four sections in one operation. When sections have been placed in holder, they are spread, and a full sheet of foundation is slipped into place.

② → **Eliminates Falling Down of Foundation** . . .
 When the sections close back together, the foundation is locked in place on three sides, and securely held.

③ → **Foundation fills sections completely**
 The building of perfect sections of honey is encouraged; the building of pop-holes and other undesirable openings discouraged as far as possible.

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Prompt Service and Satisfaction Assured.

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P. M. WILLIAMS :- Mt. Willing, Ala.

MEETINGS AND EVENTS

Current association meetings and organization notices are published in this department each month. Secretaries and other officers of organizations who wish publicity here should make sure that notices are sent in before the fifteenth of the month preceding publication. Frequently notices are received too late for use and consequently do not appear at all.

An Unusual Beekeepers' Picnic for Wisconsin

On Tuesday, June 10, starting immediately at 10 a. m., a picnic will be held at Watertown, Wisconsin. Place, Riverside Park, if the day is fine, or the Watertown Elks' Club, if the weather is unfavorable for an out-of-door picnic. This arrangement insures a good get-together, rain or shine.

Speakers

Mrs. Winifred B. Loggans, of the Kellogg Company's home economics staff, Battle Creek, Michigan, and one of the leading honey cooking demonstrators in the country.

Miss Malitta Fischer, formerly secretary of the Wisconsin State Beekeepers' Association and honey specialist of the American Honey Institute.

Guy LeSturgeon, editor of the "Beekeepers' Item" and former manager of the Texas Honey Producers' Association, as well as former president of the American Honey Producers' League.

H. F. Wilson, in charge of beekeeping at the University of Wisconsin and secretary of the Wisconsin State Beekeepers' Association, as well as former president of the American Honey Producers' League.

C. D. Adams, state bee inspector and secretary of the State Apiary Inspectors' Association of America.

James Gwin, Wisconsin state marketing agent and an authority on the organization of the Mountain States Honey Producers' Association.

E. C. Chambers, state entomologist and in charge of the administration of the Wisconsin state apiary inspection law.

Honey cooking demonstrations and short talks on bees and marketing honey, interspersed with amusements, will be the features of the day.

This is one of the strongest one-day programs that has ever been held, and amusements such as a smoker contest, tug of war, and frame-nailing contests will be held, the latter for the women.

All beekeepers should bring along their bee smokers and their favorite fuel to take part in the smoker contest. Prizes will be given to the winners of each contest.

Meeting will start promptly at 10 o'clock in the morning, as there is a big, full day of real entertainment ahead.

All beekeepers, their families and friends are cordially invited to attend. Pack up a picnic lunch, jump into the old car and come right along. If you don't say you have had one of the best times you ever had when it's all over, we'll take the blame. Free honey sundaes and hot coffee will be served on the grounds with your lunch.

Don't forget the date is June 10.

Jo Davies County Beekeepers' Association

On April 26 a meeting was held at J. T. Gundry's apiary at Warren, Illinois. The weather being fair, we had eighteen to twenty persons present. The meeting was called to order by President C. Duerstein.

F. C. Pellett was then introduced, his subject being "General Conditions and Changes," which was greatly appreciated by all present.

A. L. Kildow stated he would advise on any questions asked for information on bee success. At the final a sure surprise greeted the members when President C. Duerstein's wife and two daughters, Miss Ruth and Caroline, introduced some wonderful layer cake frosted and sprayed with nut kernels, as well as a fine box of choice cookies mixed with honey in place of sugar.

All present surely enjoyed the good lunch.

President, C. Duerstein; vice-president, Charles Knautz; secretary and treasurer, E. Jeffrey.

Summer Meeting at Medina

Announcement has been made of a meeting of beekeepers at Medina, Ohio, on July 29 and 30 this year. No details concerning program have been given out except that prominent speakers will be present.

Illinois Summer Tour

The Illinois Beekeepers' Association is planning a tour again this season. While the dates have not been finally determined, it is likely that July 16 to 18 will be the time. It is expected that some of the leading orchards of the state will be visited and that the importance of bees in the orchards will be the matter of foremost interest. At this season it will be possible to make a study of the results in the orchards visited.

(Continued on page 302)

DIEMER'S Bright Yellow Italian Queens

Very gentle and good honey gatherers. State inspected. Satisfaction and service. Select untested, 75c each; five to ten, 70c each; ten or more, 65c each. Write for prices on twenty-five or more.

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ITALIAN QUEENS 50c each Any Number

Highest quality queens reared and tested in our own interests as large honey producers; bred to perfection of every standard by which honey producers judge the value of GOOD QUEENS. We are honey producers, the same as you; our interests are identical. Give Davis Bros. queens a chance to do for you what they have done for us; keep your colonies at maximum efficiency throughout the season.

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Pack your honey in containers to match your choicest honey.

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50 Cents Each

40 Cents in Lots of 100

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Shipped in new cages, with new feed cans. No cages to be returned

Satisfaction guaranteed

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Are the most scientifically reared queens to be found in America. Cells are grafted and given directly to queenright colonies to start and finish. We use no swarm boxes or queenless or broodless colonies to start our cells. It took the bees 14 YEARS to tell us how to do it. The dumbest of dumb ought to learn something in that time, eh? But look at these prices:

Untested Queens, 75c each;
\$8.40 a dozen; \$60.00 a 100

Guaranteed to please you in every way. Shipments start in May. We satisfy others and we can satisfy you. Let us book your requirements now.

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High grade pure Italians.

Satisfied customers my aim.

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twenty-five for \$10.00.

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PURE ITALIAN BEES

2-lb. Package with Queen, \$2.50

Untested Queens, \$.75

Tested Queens, \$1.25

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THREE-BANDED

50 Cents

W. A. WHITMIRE, Milton, Fla.

The Adventures of the Bee Fairies

(Continued from page 271)

"We make it into bread," replied Fleet Wing.

"Bread!" cried the bee fairy children in chorus.

"Is beebread the same as pollen?" inquired Doris May.

"No, child, not exactly. Pollen is more like the flour your grandma used to make bread. We bees take this pollen, knead it with a little honey, pack it down into the cells and then it is beebread and is all ready for us to eat."

"But I thought you ate honey!" exclaimed Robert.

"We do," answered Fleet Wing. "You have noticed that baby bees come out of their cradles quite as large as older bees. To grow so fast and produce such fine bodies they must have a food rich for building body. Consequently our nurse bees eat pollen and honey, or beebread, and through a wonderful process it is within our bodies made into something that wise men call 'bee milk,' only we give it out through our tongues instead of the way your Bossy does. Our nurse bees put it into the cells as I showed you, and it becomes the wonderful pillow upon which our babies are put to bed in their cradles. By eating this wonderful bee milk as they lay in the larval stage in their cradles, our babies are able to come out fully developed bees in so short a time. It is the pollen that we ate that made our babies develop so splendidly."

"Now older bees do not have to grow," went on Fleet Wing, "but we must have a great deal of energy, so we eat honey, which is the best energy-producing food in all the world."

"Then bees do live on bread and milk and honey after all, don't they?" laughed Robert. "But tell us more about pollen. Where do they get it and how do they carry it, and can they always get it and—"

"One question at a time, please," suggested Fleet Wing. "Since you are rested, I see no reason why we should not all go out and get some ourselves."

"Goody, goody!" cried the children, delighted at the suggestion.

"But we shall need plenty of energy, so let us have a little lunch of honey before we start," Fleet Wing answered; and following her example they put their tongues into an open cell of fresh honey and took a long, delicious taste.

"How good it is!" cried Robert.

"And how lively and strong it makes me feel!" exclaimed Dickey.

"Of course it does," returned Fleet Wing. "If you humans only realized that, you would see to it that all human children, big and little, would

eat it more and more."

Refreshed, they eagerly made their way through the hive to the entrance, past the vigilant police women, and out once more into the bright, glorious summer sunshine. Through the clear air, high above the trees and meadows, once more their fairy wings bore them, straight to Uncle Lew's patch of early sweet corn at the foot of the garden.

While flying, Fleet Wing explained to them that on the hind legs of the bee is a series of stout hairs that form a pollen basket. As the bee gathers the particles of pollen dust from the flowers with its mandibles it makes them into a tiny ball, and as it flits from one flower to another the ball is passed back and deposited in the little basket.

It seemed only a moment until Fleet Wing led them down to the waving green field, nicely tasseled out. She showed them just how to gather the pollen, moisten it with a speck of honey to make it stick together, to spring into the air and pass it back to be packed firmly into the baskets. Then each of the children and their Aunt Laura tried, and Fleet Wing declared they did it perfectly. When their baskets were almost full, quite as by magic the Fairy of the Corn appeared, very beautiful indeed. Fleet Wing introduced them to her, and Robert and Dickey, even in their snug bee suits, were glad Mother had insisted on their learning how to bow politely to ladies.

"I certainly want to thank all of you for coming this morning," she said in her exquisitely musical voice. "This is such a very small field of corn, it will be necessary for you bees to help the wind scatter the pollen or we shall not be able to furnish roasting ears for Robert's birthday dinner next month." How the children exchanged glances, for did not Uncle Lew pride himself on always having his first mess of roasting ears for Robert's birthday feast?

"I am afraid we have wasted a lot of the pollen," said Robert, bashfully, shaking himself energetically. "We tried to put it in our baskets, but I guess we scattered a lot of it. It gets all over our clothes."

"Oh," laughed the Fairy of the Corn, "that is just what we want you to do. Kick it off or shake it off as you please, but scatter it about our corn. That is what helps our kernels to mature. The wind carries the pollen germs to the silks on the nearby corn and makes the kernels form. I as so glad you came."

"You see," she went on, "bees and we plants all help each other. Bees scatter the pollen, which is the life germ, and we plants in turn give flour to make into beebread."

Then as the little party prepared to go, their baskets all nicely filled, as they brushed themselves off as

best they could, the Fairy of the Corn invited them to return. "Bees are always so welcome," she assured them.

As they were passing over the garden, Robert and Dickey spied grandma's great beds of hollyhocks gorgeously red, pink and yellow in the bright sunshine.

"I believe," suggested Robert to Fleet Wing, "I believe I could carry more. Hollyhocks have loads of pollen. Can't we stop and get some more?"

"No," said Fleet Wing firmly. "That would never do. Only careless, shiftless bees do a trick like that. You see, if we should mix corn pollen with hollyhock pollen, it would not be fair to either. Plants and flowers are so kind in furnishing food for our babies that we must serve them faithfully, and only mix pollen of the same plants, so they will grow and produce seeds."

"In other words," said Aunt Laura gently, "You are living up to the Golden Rule and treating the flowers and plants as you would have them treat you."

"Yes," replied Fleet Wing, "that is it."

"But supposing," suggested inquisitive Dickey, "supposing there

were no flowers to give you pollen and you had babies to feed, what would you do then?"

"That happens," returned Fleet Wing. "Sometimes in the late autumn we feel our family is not strong enough to stand the winter, and we want to raise more babies. We have then to find something else we can use. If we can find no pollen, sometimes we get cornmeal, or perhaps oatmeal. This makes very poor bread, but it will do if we have nothing better."

Doris May's eyes grew big with interest.

"Is that what you bees were hunting when you got something out of our Bunny Rabbit's dish last fall? We wondered what in the world you were after in Bunny's dish of rolled oats."

"That was just it," answered Fleet Wing. "We were looking for something to use as pollen to make bread that our babies might be properly fed, and it was mighty fine of you and your rabbits to furnish it for us."

(Further adventures of the bee fairy children will be told in our next issue.)

The following charming letter

came to Aunt Laura from far-off Hawaii. Aunt Laura was indeed very happy to get this letter and is writing herself to Mary. She is wondering, too, if there are other children, perhaps big children, who may like the adventures and want to write her about them:

3415 Kilauea Ave.,
Honolulu, T. H.,
April 15, 1930.

Dear Aunt Laura:

I would like to read more adventures of the bee fairies. I am drawing you a picture about the bees. I love to watch the bees work. Sometimes our bees when they go into the box take in pollen. Sometimes the ants are about and I kill them. They are dangerous little insects to bees, for when the ants get on the bees it hurts the bees. The ants get on our bees' legs and crawl over them.

Your friend,

Mary Notrangelo.

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Crop and Market Report

Compiled by M. G. Dadant

For our June crop and market page we asked reporters to answer the following questions:

1. How is the honey crop so far compared to last year?
2. Honey plant conditions and prospects?
3. How is the honey market?

THE HONEYFLOW

Of course, in the north half of the country there have been no major honeyflows, and the only reports we can get are as to whether fruit bloom was satisfactory and bees in good condition.

The honeyflow has been delayed in the Atlantic coastal states owing to dry and cold weather, and the same condition exists pretty well over the Southeast. Georgia and Florida are just now reporting nice flows, but the early flows were disappointing owing to the difficult weather. In fact Alabama seems to be the only southeastern state reporting anything like conditions good, and in their case the flow is far heavier than last year.

Louisiana and Texas are reporting practically no honey owing to the cold and inclement weather. Arizona and New Mexico have only had mediocre flows so far.

California reports from its southernmost areas a very fine flow from orange, the flow from this source being in excess of what it was a year ago and the prospects fine for coming honeyflows. In south central California, however, the weather has been very bad and bees are losing rather than gaining.

HONEY PLANT PROSPECTS

In the northeast section of the country honey plant prospects seem to be about the equal of a year ago, except that in some sections there has been very dry, cool weather. New Jersey particularly is reporting conditions too dry, and the same existed over a good deal of the Northeast until recently, when rains began falling and were a great help. In Virginia and Maryland the weather is still backward, but prospects are excellent. The same is true of the Southeast, in fact of the whole South, and providing weather is satisfactory from now on, it looks like conditions would perhaps make up some of the earlier losses in honeyflow. In Texas conditions are similar, except that every day of cool and bad weather cuts off just that much of the earlier part of the crop. Conditions still are favorable if the weather should turn soon.

In the Central West we believe that the white clover prospects are slightly better than they were a year ago and bees in far better condition. As this is being written, on May 17, the weather conditions are bad, with a cold, cloudy spell which is keeping bees in the hives and using up stores very fast. A warm rain and clear weather would make clover bloom quickly. The northern states report similar conditions, with prospects considerably above normal, particularly in Minnesota.

North Dakota is complaining of a great deal of plowing under of sweet clover, with the possibility that there will not be over 50 to 75 per cent of the acreage that there was a year ago. We believe that this condition will prevail in the sweet clover states as time goes on—that is, that the honey producers will have to seek new locations in the states in order to be assured of ample acreage of the big honey-producing plants. In South Dakota conditions are normal or above, and the same applies to the other plains states.

The northern part of the intermountain territory seems to be perhaps a little above normal, whereas the southern sections are reporting a little below normal owing to the dryness of the season.

In the northern Pacific states conditions seem to be normal, and the same is true of northern California, al-

though the cold weather has been hanging on longer than usual. In central and south central California, bees are apparently dwindling, owing to the very cold and backward weather and the numerous frosts, which have been far from usual. One of the oldest beekeepers in the state reports the most peculiar and coldest conditions for May he has ever known. In the southernmost section the prospects are far above a year ago and it looks like California at any rate, regardless of the unfavorable reports from other sections, would have a much better crop than the past three or four years, when crop conditions have been very bad.

It is too early to give much on Canadian conditions except that snows have been sufficient and honey plants seem to be in good shape throughout the entire dominion.

HONEY MOVEMENT

Never have we seen such a universal report on slowness of the honey market. From east to west and north to south this seems to be the case, and even the people who have sold out completely on honey reported that the slowness of the sale made them much later in getting cleared up of the crop than has been the case in years past.

The biggest carriers of honey will be in the Central West, where quite a large number of the larger beekeepers are still carrying a part of their crop, with no chance of sale at anything like satisfactory prices.

There are also a considerable quantity of carloads of honey in the intermountain territories still seeking a market and at a price which ranges from one to two cents below what might have been obtained early in the fall.

The carryover will not be excessive, but it will be far larger than a year ago, with conditions not nearly so bright for an opening market of the new crop at such good figures. The new orange crop is going onto the market in good shape, although prices are not as high as they were a year ago, and this in view of the fact that the California markets are fairly bare of honey owing to short crops there for two or three years.

In Canada the western provinces have fairly well cleared up their crop because their demand is steady and mostly for home consumption. In Ontario and Quebec the demand seems to be much lighter, particularly in Ontario, with a considerable carryover and very slow demand.

SUMMARY

All in all, we believe that bees are coming up to the honey crop in much better condition than they were a year ago and that prospects throughout the country are perhaps just a little bit better than they were in 1929, with the weather, as usual, holding the balance of power to determine whether the crop will be a failure, a bumper or just average. In our opinion the crop will be at least the equal of a year ago if average weather conditions exist.

It most certainly looks like, with the business conditions as they are now and the carryover of honey and consequent pessimistic attitude of producers, that we can hardly expect the markets to open as high as they did a year ago, particularly in view of the German duties which have taken effect since then. Of course a quickening of demand on the part of the general public would have a good deal to do with stiffening of honey prices, but most certainly the year 1930 is going to be a year when every beekeeper should strain himself to make individual and cooperative efforts to boost the demand for honey in every way possible.

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CAUCASIAN QUEENS for 1930 from imported mothers. One, \$1.50; six, \$7.50; twelve, \$14.00. Eighty-five per cent pure mated. Safe arrival and satisfaction guaranteed in U. S. A. and Canada. Tillery Bros., R. 6, Greenville, Ala.

WE appreciate your past business and solicit your queen and package business for this season. Prices on application. Louisiana Southern Bee Farm, R. 2, Baton Rouge, La.

GOLDEN Italian queens for 1930. The big, bright, hustling kind (the kind that get the honey). Satisfied customers everywhere. Untested, \$1.00 each; six, \$5.00; twelve, \$9.00; \$65.00 per hundred. Tested, \$1.50 each. Two-frame nuclei or two-pound packages, \$3.25 each; ten or more, \$3.00 each. Safe arrival guaranteed. Health certificate furnished. E. F. Day, Honorville, Ala.

PACKAGE BEES—Three-banded Italian. If you want bees that are gentle to handle, our bees will please you. Young queens and baby bees; half pound overweight in every package. Bees shipped in light, roomy cages. Syrup feeder in cage. Queen shipped inside of package bees in cage with queen on candy feed. Two-pound package with queen: 1 to 9, \$3.00 each; 10 to 100, \$2.75 each. Three-pound package with queen: 1 to 9, \$3.75 each; 10 to 100, \$3.50 each. State inspection certificate attached. Prompt delivery; satisfaction guaranteed. Little River Apiaries, Box 83, Gause, Texas.

BUY your queens from Allen Latham, Norwichtown, Conn.

GOLDEN Italian queens for sale. The same strain that has given satisfaction for over thirty years. One, \$1.00; six, \$5.00; one dozen, \$9.00. Health certificate with each queen. Satisfaction guaranteed in United States and Canada. E. A. Simmons Apiaries, Greenville, Ala.

CHOICE, bright Italian queens that are a pleasure to work with and you will be proud to own. Requeen with stock that has been bred and selected in the North the past twenty-seven years for good wintering; hustlers, gentle, and fine color. One queen, \$1.00; dozen, \$10.00. Breeders, \$10. Emil W. Gutekunst, Colden, N. Y.

GOLDEN Italian queens. Untested, \$1.00 each, any number. Untested won't be ready until June 1. Tested of last year's rearing, ready now. Tested queens, \$2.00 each, any number. I will guarantee my queens in every respect. J. B. Brockwell, Barnetts, Va.

PACKAGE BEES—Hardy northern strain. Van's Honey Farms, Hebron, Ind.

THREE-BANDED Italian bees and queens, ready June 1. Two pounds with queen, \$4.00; three-frame nuclei with queen, \$5.00; full ten-frame colonies, \$15.00. Select untested queens, \$1.00 each; dozen lots, 75c each; \$60.00 per hundred. No disease, safe arrival and satisfaction guaranteed. My twentieth year. A. E. Crandall, Berlin, Conn.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

GOLDEN Italian and Carniolan queens. Tested, \$1.00; untested, 65c. Safe arrival guaranteed. Write for prices on package bees and nuclei. C. B. Bankston, Box 65, Buffalo, Texas.

ITALIAN bees and queens. Quality unexcelled. Also, I want you to have every ounce of good, live bees at your end of the line your order calls for. Also, unless weather conditions make it impossible, bees leave here on date specified. O. P. Hendrix, West Point, Miss.

IF you want gentle bees, good honey gatherers and beautiful to look at, my strain of golden Italians will please you. Prices: Untested, \$1.00; six, \$5.40; twelve to forty-nine, 75c each; fifty or more, 70c each. Tested, \$1.50 each. Circular on request. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

IMPROVE your stock and insure a crop by using our Line Bred Italian Queens, holding Indiana state comb honey production record for ten successive years. A trial will convince. Untested, 1 to 25, \$1.25; 25 to 100, \$1.15. Select untested, 1 to 50, \$1.50; 50 to 100, \$1.25. Guaranteed select tested, each, \$2.50. "Honeyville Queen Apiaries," Foothill Blvd., Rt. 1, Monrovia, California.

SIMMONS QUEENS—One, \$1.00; six, \$5.50; twelve, \$10.00. No disease; prompt delivery. Fairmount Apiary, Livingston, N. Y.

THREE-BANDED ITALIAN QUEENS—1, \$1.00; 12, \$10.00. Health certificate with each shipment. G. K. Cannon, Pleasanton, Texas.

CAUCASIAN—Queens are very prolific. Bees extremely gentle, superior fliers, longest tongues and lives of any race. The only red clover bee. Try them, be convinced. Untested, 1 to 5, \$1.50; 6 to 12, \$1.35. Send for free literature. Bird's Apiaries, Odebolt, Iowa.

ITALIAN QUEENS—Untested, ten, \$1.00 each; twenty-five, 85c each. More than twenty-five, 75c each. Satisfaction guaranteed. Ready to ship June 1 to June 10. R. B. Grout, Jamaica, Vt.

THANKS for your past business. Will be open for your orders on the same stand in '31 with better stock, better breeding, better service and larger holdings. If you are in the city of New Orleans in the meantime, look me up at Kenner, Louisiana. Jes Dalton, Kenner, La.

JUNE special price on our golden Italian queens. Producing large, beautiful bees. Solid yellow to tip. Select untested, \$1.00 each. Dr. White Bee Co., Sandia, Texas.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

BRIGHT Italian queens. Bred by selection for sixteen years in same location. Large select queens only. Prolific layers. Bees gentle, hardy and beautiful. May prices, \$1.00 each, \$10.00 dozen. Hailey's Apiaries, Hughes Springs, Texas.

WRIGHT'S golden queens. Producing large, hustling bees, very gentle and beautiful. Select untested queens, \$1.00 each; five to 10, 90c each; ten or more, 80c each; \$70.00 a hundred. Selected tested, \$2.50 each. Breeders, \$10.00 each. Safe arrival and satisfaction guaranteed. Satisfied customers in thirty-seven states and five provinces in Canada. W. C. Wright, Holt, Mo.

JUNE queens, \$50.00 per hundred. Let us send you our circular and price list telling of our high-grade Italian queens at popular prices. Stearns Bee Co., Brady, Texas.

EARLY package bees. Prompt shipment, beginning May 1. Two-pound package without queen, \$2.50; three-pound, \$3.50. Add price of queen if wanted. Choice, hardy Italian queens, \$1.00; ten for \$9.00. Safe arrival guaranteed on return of dead bees and bad order receipt signed by express agent. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

GOLDEN Italian queens, bred for honey crop. For June: one to six, 90c each; ten up at 75c each. July on at 65c each. Delivery guarantee. Special: Good laying queen on three frames of brood and honey with plenty of bees, a full colony, \$3.90. Discount on quantity. Victor Prevot, Beekeeper-Shipper, Mansura, La.

ITALIAN QUEENS—Select untested, every one guaranteed to please or replaced without cost to you; 45 cents each. The Mangham Apiaries Co., Mangham, La.

GOLDEN Italian queens, producing golden bees, very gentle and good honey gatherers. State inspected. Satisfaction guaranteed. Tested, \$1.50. Select tested, \$2.50. Untested, \$1.00; six, \$5.40; twelve or more, 80 cents each. After July 1: Tested, \$1.25. Select tested, \$2.25. Untested, 90 cents; six, \$4.80; twelve or more, 70 cents each. Select untested, \$1.00. D. T. Gaster, R. 2, Randleman, N. C.

DIEMER QUEENS—\$1.00 each; six, \$5.00; twelve or more, 75 cents each. Queens sent in "Double Barrel" introducing cage. It gets queens to you in fine condition and gets them introduced without balling. Big, double, queenright colonies work on queen-cells from start to finish. Mated from large, four-frame nuclei, and the young queens have the best chance in the world to develop. Yellow queens that produce yellow bees that get the honey. J. F. Diemer, Liberty, Mo., Route 1.

FOR SALE

FOR SALE—Highest quality queen mailing cages. Used extensively by the largest queen breeders in the South. Samples and prices on request. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE—Two pounds bees and young Italian queen, \$2.50. Health certificate furnished. Satisfaction guaranteed. Write J. L. Leath, Corinth, Miss.

FOR SALE—100 colonies bees in painted hives, with full sheets wired foundation. No disease. Price of hives and foundation only asked. L. L. Perebee, Pineland, S. C.

FOR SALE—Eleven colonies bees. No disease. Five dollars each. Mrs. Lester Lackie, Route 3, Bradford, Ill.

HONEY FOR SALE

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

COMB, extracted and chunk honey in ten sizes glass containers and 2½, 5-, 10- and 60-pound tins. Livest labels in U. S. or plain. One of our special display cases with \$25 and \$50 orders. Write for free illustrated circular showing our packages and free samples of honey. Griswold Honey Company, Madison, O., U. S. A.

WHITE CLOVER comb honey, packed eight cases to carrier. W. L. Ritter, Genoa, Ill., DeKalb County.

FOR SALE—Extra choice white clover honey, case or carload; also amber. David Running, Fillion, Mich.

HONEY (comb and extracted), pure maple syrup, maple sugar and sorghum molasses. Special price to quantity buyers. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

STURDEVANT'S CLOVER HONEY — St. Paul, Neb. Any quantity.

SHALLOW frame white comb honey and white extracted honey. The Colorado Honey Producers' Ass'n, Denver, Colo.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Illinois.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

HONEY FOR SALE—White and amber honey in 60-lb., 10-lb. and 5-lb. tins. Write for prices. Dadant & Sons, Hamilton, Illinois.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE Clover extracted honey. Write for prices and samples. Kalona Honey Co., Kalona, Iowa.

FOR SALE—Three cars white and white amber clover extracted, packed in sixties, 7c fob La Jara, Colo. Stahmann Apiaries.

COMB HONEY—One No. 1 lot in carriers, 8 cases of 24 sections each, \$3.50 per case. Extracted honey, white clover, sweet clover, buckwheat. Write us about your needs. A. I. Root Company of Chicago, 224-230 W. Huron Street, Chicago, Illinois.

ONE CAN white clover, \$5.10. Case, \$9.60. Delbert Lhommedieu, Colo, Iowa.

FOR SALE—White clover honey in sixty-pound cans, 8½c per pound. Joseph H. Hoehn, Ottoville, Ohio

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FINEST white clover honey, 8c pound. Edward Klein, Gurnee, Ill.

FOR SALE—Water-white clover honey in new cans and cases, \$9.00 per case. Virgil Weaver, Moville, Iowa.

WATER-WHITE honey, carload or less. Price reduced. McIntire & Sons, Fruitdale, S. D.

EXTRACTED white at a reasonable low price to small bottlers or buyers, well strained and settled and free from impurities. A fine table honey, sample 15c. Geo. Seastream, Moorhead, Minn. A Producer.

HONEY AND BEESWAX WANTED

WANTED—Car lots of honey. State quantity, shipping point and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Company, 204 Walnut St., Cincinnati, Ohio.

SUPPLIES

SAGGED COMBS are result of slackened wires caused by wires cutting soft wood of frames. Use metal eyelets. Per 1,000, 60c. Handy tool for inserting eyelets, 25c. Postage 3c per 1,000. Superior Honey Co., Ogden, Utah.

COMB FOUNDATION—Note these prices on twenty-pound lots: Medium brood, 64c; thin super, 74c. Can furnish the new non-sagging foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

MAKE queen introduction sure. One Safin cage by mail, 25c; five for \$1.00. Allen Latham, Norwichtown, Conn.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly. The Colorado Honey Producers' Ass'n, Denver, Colo.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

SHIPPING cases, glass front, fibre liners, 25 for \$7.50; 50 for \$13.75; 100 for \$25.00. Hive stands, 10 for \$2.25. Supers for 4x5 sections complete, 5 for \$3.95. Send for bargain list. St. Louis Apiary Supply Co., Commercial Bldg., St. Louis, Mo.

FOR SALE—200 used 60-lb. honey cans, good condition. Forty cents per crate. FOB St. Louis. W. E. Wilson, 2659 Sutton Ave., St. Louis, Mo.

BIG BARGAIN in sections; twenty thousand Root's 4¼x4¼x1½ sections. A grade, \$7.75; B grade, \$6.75 per thousand. The Stover Apiaries, Tibbee Station, Miss.

FOR SALE—Used 60-lb. honey cans, two to case, in good condition. Cheap. E. Rau & Co., 110 N. Franklin St., Chicago.

BARGAIN—100 Root standard ten-frame hive bodies with drawn combs wired; metal covers, bottom boards, queen excluders, extractor, etc. Never had foulbrood. Address William D. Dunham, 97 E. Tenth St., Whitestone, N. Y.

WANTED

WANTED—To buy 100 second-hand covers and bottom boards for ten-frame hives. Must be cheap and delivered. E. A. Cushman, Northbrook, Ill.

MISCELLANEOUS

PLANS for poultry houses; 150 illustrations. You need this book. Write for free offer and sample copy of "Inland Poultry Journal," 51 Cord Bldg., Indianapolis, Ind.

SELL IT—Honey or bees or queens or second-hand equipment or pet stock or poultry, by advertising it in Gleanings in Bee Culture, Medina, Ohio, with its more than 20,000 paid subscribers. Rates: 7c a word classified; \$4.20 an inch for display advertising. That great beekeeper, George S. Demuth, is editor, for whose beekeeping teachings 20,000 beekeepers subscribe.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, \$2.55 (10/6). The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

Doings in the Northwest

(Continued from page 277)

torney made it a point to question the witnesses regarding the effect of the presence of disease on honey used for human consumption. These questions were asked at the request of beekeepers in order to bring out to persons present at the trial the fact that honey could in no way be impaired through the existence of disease.

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Surplus of Apple Blossom Honey Reported in Snohomish County

Mr. Clayton Turnipseed, of Snohomish County, reports a yield of six tons of surplus apple blossom honey. Mr. Turnipseed moved two hundred colonies of bees from western to eastern Washington about the middle of April, placing them in the orchards of the famous Wenatchee Valley for pollenizing the apple blossoms. Fine weather coupled with a heavy honey-flow enabled the bees to gather nectar rapidly. Mr. Turnipseed reports that three-pound packages placed in hives on foundation had two combs of capped honey by the time the queens were released from the cages. Mr. Turnipseed kept his bees in the orchard districts approximately three weeks. He found it necessary to remove the honey from the hives before shipping the bees back to western Washington to prepare for the fireweed flow. Although he lives in a region in which considerable acreage is annually used for the production of seed from cabbage and turnips, Mr. Turnipseed states that since he has practiced moving his bees into the apple districts, no one can justly accuse him of producing turnipseed honey.

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Dennee Predicts Large Fruit Crop

Mr. John S. Dennee, Federal agricultural statistician, prophesies gen-

erous yields of fruit from the orchards of the widely known Wenatchee and Yakima valleys this season. Absence of frost, heavy bloom, and clear, warm weather, which has been favorable to the pollination activities of honeybees, all point to heavy yields and bounteous crops, Mr. Dennee reports. Winter injury to peach and apricot trees will curtail the yield of these fruits, and in the Walla Walla district cherry trees have also suffered from the severe winter. The fine weather during the blossoming period of all varieties of fruit trees has done much to encourage orchardists, because it has enabled the bees to carry out their part of the work most effectively.

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Spring Prospects in the Northwest

Beekeepers in the fireweed regions of Washington and Oregon are optimistic regarding crop prospects. Although the winter has been abnor-

mally dry, fireweed growth is heavy, and the mild, sunny spring weather coupled with heavy flows from the maples has enabled the bees to build up rapidly. Eastern Washington and Oregon beekeepers also report a favorable spring, with prospects bright for good yields from alfalfa and sweet clover. Mr. T. L. Ball, of the Superior Honey Company, reports conditions of honey plants and of bees favorable for a normal honey crop in Utah and Idaho. Concern is felt in the intermountain region because of the light snowfall during the winter. Although severe cold of long duration made the winter of 1929-30 one to be long remembered, the absence of heavy snowfall may seriously curtail the supply of irrigation water for summer crops.

Meetings and Events

(Continued from page 295)

Field Editor to Montana

Frank C. Pellett, Field Editor of the American Bee Journal, expects to spend several weeks in western North Dakota and in Montana this summer. It is hoped to learn more about unoccupied territory in these two states and to make a study of the honey plants of the northern Rocky Mountain region. His headquarters will be at his farm at Atlantic, Iowa, when not in the field, during the summer months.

Colorado Association to Meet June 28

The field meeting of the Colorado Honey Producers' Association will be held Saturday June 28, at Rocky Mountain Lake Park, Denver, Colorado, commencing at 10 a. m. Dr. H. E. Barnard, president of the American Honey Institute; Malitta D. Fischer, his able assistant in the

work of the Institute, and Miss Mary I. Barber, of the Kellogg Company Battle Creek, Michigan, will be with us, and they will address the meeting. All beekeepers of the intermountain region are invited to come and have a good time. Write us for program.

Colorado Honey Prod. Ass'n,

F. Rauchfuss, Mgr.,

Denver.

Mini-Cassia Meeting

More than thirty members of the Mini-Cassia Honey Producers' Association met at the home of President E. J. Farnsworth, near Rupert, Idaho, recently, and enjoyed a huge picnic celebration. The organization was formed in 1923. New officers elected were: President, E. J. Farnsworth; vice-president, A. A. Larsen; secretary-treasurer, C. C. Barlow, of the Emerson district; executive committee, J. C. Clements, E. B. Skinner, and H. H. Keck.

L. H. Sweetser, Cassia County Fair manager, of Burley, Idaho, delivered an interesting address to the honey men. Beekeepers resolved to exhibit a booth at the Cassia County Fair in September, at Burley. The following committee was chosen by members of the association present at the meeting to take charge of the booth matter: William Schoenfelt, A. A. Larsen, Mrs. H. H. Keck, J. C. Stapley, Frank Beach, and J. W. Stewart.

Other subjects discussed at the bee gathering included: "The Top Entrance Hive," by E. B. Skinner; "Problems of Inspection" and "Types of Hive Equipment."

The next picnic will be held at the home of Roy Sohn, near Burley, in June. G. P.

Last Minute Bargain in Package Bees

HYBRID BEES

With Standard Pettit Service and
Guarantee of Satisfaction

We have bought 500 colonies of vigorous hybrids, using them in our Canadian apiaries as package bees. We offer what are left, with the same high quality Italian queens, at attractive prices.

One 2-lb. package with queen	\$3.00
Ten such packages, each	2.75
Fifty or more such packages, each	2.60
Larger pkgs., for each additional pound	.80
Queenless packages, deduct from each	.75

For prompt, dependable service,
write or wire

Morley Pettit, Valdosta, Ga., U. S. A.

QUEENS 40 Cents

Beginning June 1, I will sell Queens at following prices until October: One queen, 50c; six, \$2.80; dozen, \$5.40; in lots of fifty or more, 40c each. Better book your order now and avoid the rush. Breed three-band Italians only. No disease.

C. G. ELLISON, Belton, S. C.

BETTER QUEENS

If better queens were produced we wouldn't blame you for buying them,

FOR 50c

We will sell you queens that we will buy back if you can beat them.

ORDER THEM

And if the above guarantee is not broad enough, write your own and we will stand to that.

YOU MUST

Be satisfied if you buy from Stover. We are here to serve you.

THE STOVER APIARIES

TIBBEE STATION, MISS.

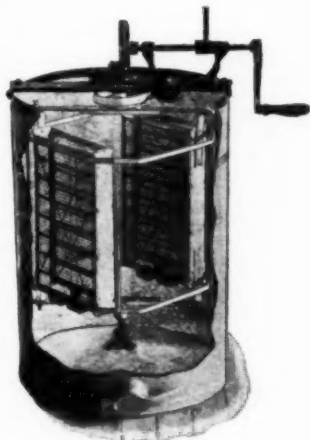
Telegraph Office, Mayhew, Miss.



\$12.75

New Novice two-frame Extractor, extracts 60 combs per hour, gets 100 per cent of available honey. Ball bearing; a child can turn it. Made also in four-frame size, that does twice the work of the two-frame and does it easily, and priced at only \$18.50.

More sold, more popular than any other big extractor ever brought out

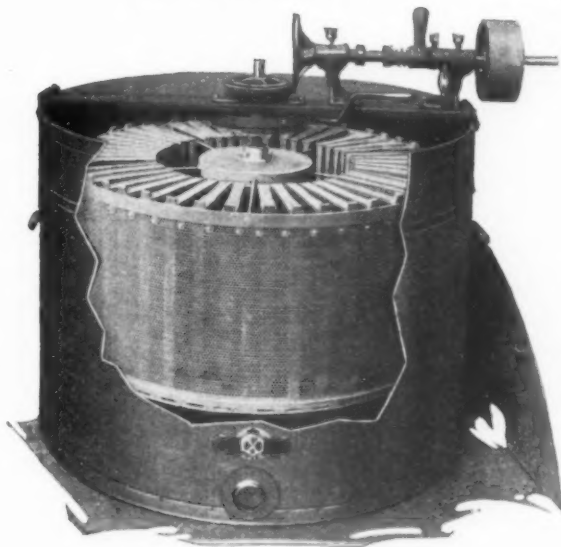


\$24.90

Two-frame Reversing Extractor, for an apiary of 10 to 25 colonies. More in use than any other reversible extractor in the world. Made with direct drive at \$17.50. Both models in two sizes.

LOWER PRICES AND 60 Years of Experience

Are back of this complete line of extractors, and back of every one of them, too, is the full Root Guarantee.

**SIMPLICITY 45-FRAME, \$128.00****SIMPLICITY 20-FRAME, \$78.00**

The Simplicity 45-frame stands unchallenged today as the most efficient big extractor made. Hundreds of large honey producers everywhere testify to this fact. Least first cost, least upkeep cost. The new 20-frame Simplicity is becoming a great favorite—just as good in proportion as the 45-frame, but takes less room and less price. Big honey producers are buying them to dry cap-pings.

Send For

Full description and prices of our sixteen different sizes and models of extractors as listed in our 1930 catalog. We want to tell you anything you may want to know about extractors. You can have our 60 years' experience and we will save you money, and guarantee you satisfaction.



\$7.95

Bench Extractor, two-frame. In two to three minutes extracts 90 per cent of the available honey from both sides of two combs. Can be operated on bench or table. Just the right extractor for one to five colonies, or for extracting unfinished sections.

Does the most work in the least time and at the least expense



\$52.50

Four-frame Multiple Reversing Extractor, for an apiary of 25 to 50 colonies. An ideal machine, tried and found right by thousands of beekeepers. Made also as power extractor in both four-frame and eight-frame sizes.

The A. I. ROOT COMPANY, Medina, Ohio

Queens

Yancey Hustlers. Three-band Italians.

Record Honey Makers.

50c each by the hundred; twelve, \$8.00; one, 75c

Every queen guaranteed to please

CANEY VALLEY APIARIES,

Bay City, Texas

. . IF YOU WANT . .

Quality -- prompt delivery -- at the lowest prices
send for your copy of our bee supply
catalog today.

CHARLES MONDENG COMPANY

159 Cedar Lake Road

Minneapolis, Minnesota

Root Queens and Bees

The origin of Root "QUALITY" queens dates back to 1865, when the late A. I. Root captured his first swarm of bees, then purchased his first \$20.00 Italian queenbee from L. L. Langstroth. Since then we have spared no pains in developing a strain of Italian queens which today has no superior.

We begin furnishing northern-bred queens from our Basswood Apiary about June 15. Prior to that date we furnish the best southern-bred queens obtainable.

We receive many unsolicited testimonials regarding the merits of Root Queens. Lack of space permits only one, from F. J. Jones, Utica, New York, who writes as follows:

"I inclose check for \$12.00, for which please send me immediately 12 more of those fine queens that produce those large yellow, gentle honey-gatherers.

"Last year I purchased several of your Italian queens and I thought you might be interested in them, so inclose pictures of two hives. The bees therein are the progeny of Root queens.

"It is a pleasure to have queens that produce large colonies that fill the supers, but Root queens do even more. Their progeny are hardy and very gentle and their golden color makes them fair to look upon."

PRICES FOR UNITED STATES AND CANADA ONLY

	Quantity: 1 to 24	25 to 49	50 or over
Untested	\$1.00 each	\$0.85 each	\$0.75 each
Tested	2.00 each	1.85 each	
Select Tested	5.00 each		

Customers outside U. S. A. and Canada must add 25 cents per queen to above prices to cover extra postage and cost of larger cages.

Note: Our **UNTESTED QUEENS** are young, fertile queens reared this season, that prove to be approximately 99 per cent purely mated.

Our **TESTED QUEENS** are older queens guaranteed purely mated.

Our **SELECT TESTED** queens are choice tested queens that might be used as breeding queens, although they are not tested for breeding purposes.

OUR GUARANTEE ON QUEENS—We guarantee safe arrival of queens sent in mailing cages to customers in the United States and Canada, but not to island possessions or other foreign countries. We agree to refund the money or replace the queen if the one first sent arrives dead, provided the beekeeper receiving the dead or unfit queen notifies us and returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted. **Guarantee does not cover queens shipped out of U. S. A. and Canada.**

BEEES IN COMBLESS PACKAGES BY EXPRESS

	(No Queen)	1 to 24 pkgs.	25 to 49 pkgs.	50 or over
2-lb. pkg. of bees		\$3.50 each	\$3.00 each	\$2.50 each
3-lb. pkg. bees (best for orchards)		4.50 each	4.00 each	3.50 each

THE A. I. ROOT COMPANY, MEDINA, OHIO

"American Honey Plants"

The third edition of "American Honey Plants," by Frank C. Pellett, Field Editor of the American Bee Journal, has just come from the press. Seldom is a book of this kind so extensively rewritten in a revised edition as this one has been. Many of the articles are entirely replaced by new material. Many others are rewritten in part, and there are also many new plants included for the first time.

Several of the illustrations have been replaced by new ones and many new ones added. There are thirty-four new cuts which have not appeared in either of the previous editions.

Several months were spent by the author in the Southwest since the second edition was printed, and much new material concerning the honey sources of Arizona, New Mexico and adjacent regions is included.

In addition to visiting nearly every important beekeeping region in the United States and Canada, the author has carefully digested all the literature relating to honey plants. There are hundreds of quotations from other observers.

There is some new information added for practically every locality, and much material included in this book is not elsewhere available. With a new green fabrikoid binding, "American Honey Plants" appears in its revised edition as virtually a new book. The price remains the same as in the second edition, \$3.

German Honey Definitions

Under date of March 21, the German Government issued an executive regulation concerning honey which gave in detail the definition of the various kinds of honey. First, flower honey is recognized as different from honeydew honey; German honey is recognized as distinct from foreign honey—honey produced in any country outside of Germany. Manner of production is distinguished as comb honey, extracted honey, strained honey, etc. Likewise the use intended, as table honey, baking honey, etc., is separated.

Deteriorated honey is described as honey which has turned sour from fermentation, or honey which contains brood, is mouldy, dirty, or has a bad odor or taste, or honey which has been overheated so that diastase has been weakened or destroyed.

Adulterated honey is honey which contains sugar or is mixed with other products, or to which has been added coloring material, flavors or other foreign matter, or water. All such must be labeled as artificial honey.

The full text of the definitions can probably be secured by request from the Bureau of Foreign and Domestic Commerce at Washington.